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# SPERMATOPHYTES, MOSTLY PERUVIAN—II



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# SPERMATOPHYTES, MOSTLY PERUVIAN—II

J. Francis Macbride

In the preparation of a large part of this paper I have had the advantage of study at Berlin-Dahlem. The collections there are well known not only because of their extent but also because of their excellent organization, and their intrinsic scientific value is augmented by the freedom granted students. Many botanists from all parts of the world have had the pleasure and satisfaction of experiencing this when engaged in research at Dahlem. The fact is a truism; but in restating it I add with deep appreciation my own thanks to Professor Diels and to Professor Pilger, as well as to the curators of the different groups. The friendliness and interested helpfulness that, in a long sojourn, it has been my pleasure to know from all the members of the staff is acknowledged gratefully. In the library I have had the kind and efficient help of Miss Unruh, the librarian, and, in the herbarium, of Mr. Schulz-Korth, the assistant.

As indicated on the title-page I have the honor of including here descriptions of a number of new species by several of the botanists associated at Berlin-Dahlem. These are based, as are my own, upon the Peruvian collections obtained by Field Museum continuously since 1922 which now probably equal in extent but not in importance the great herbarium of the plants of that country at Berlin-Dahlem.

## 1. NEW SPECIES OF VARIOUS FAMILIES

**Anthurium Schunkei** K. Krause, sp. nov.—Caudex validus cataphyllis magnis fibroso-dilaceratis obtectus. Foliorum petiolus validus supra canaliculatus, circ. 2.5 dm. longus; lamina tenuiter coriacea utrinque glaberrima sagittiformis, usque ad 4 dm. longa, 2.5 dm. lata; lobus anticus anguste triangularis apice breviter acuminatus summo apice minute apiculatus, lobi postici extrorsi rotundati sinu lato obtuso sejuncti quam anticus circ. sesqui brevioribus; nervi laterales I 4-5 basales in costulas validas in sinu longe denudatas conjuncti, nervi costales 1 utrinque circ. 8-10 angulo 70–80° a costa patentes arcuatim adscendentes demum in nervum collectivum tenuem a margine 3–5 mm. remotum conjuncti. Pedunculus validus supra praecipue basin versus canaliculatus, circ. 3.5 dm. longus, basi 1.2 cm. crassus, sursum attenuatus, sed infra spatham reincrassatus. Spatha anguste oblonga apice circ. 1 cm. longa acuminata, 1.5 dm. longa, usque ad 3.8 cm. lata, in siccitate

obscure brunnea. Spadix stipite 7–8 mm. longo suffultus, anguste cylindricus, apice obtusus, leviter curvatus, 1.4 dm. longus, 6–9 mm. crassus. Tepala obtusa. Staminum filamenta dilatata. Ovarium breve stigmate oblongo vix elevato coronatum.—Peru: Dept. Junín in Chanchamayo Tal, um 1,200 m. (*C. Schunke 293;* bl. Jan.).

Die Art schliesst sich an *Anthurium cabrerense* Engl. an, doch sind bei letztenem die Spathen breiter, mehr eiförmig bis lanzettlich und im Verhältnis zum Kolben länger; ausserdem ist die Zahl der Blattnerven verschieden.

**Anthurium gracilipedunculatum** K. Krause, sp. nov.—Caudiculus scandens ramosus, internodiis 3–6 cm. longis, 3–4 mm. crassis. Cataphylla anguste lanceolata acuta, internodia includentia, 3–5 cm. longa, diu persistentia. Foliorum petiolus tenuis basi vaginatim dilatatus quam lamina paullum brevior, 5–7 cm. longus, circ. 2 mm. crassus, geniculo 6–7 mm. longo paullum incrassato praeditus, supra canaliculatus; lamina coriacea oblongo- vel elongato-lanceolata apice breviter cuspidulata, basi obtusa vel rotundata, 8–11 cm. longa, usque ad 4 cm. lata, nervis lateralibus 1 quam secundarii paullum crassioribus a costa validiuscula supra paullum impressa subtus distincte prominente patentibus in nervum collectivum a margine 3–4 mm. remotum conjunctis. Pedunculus gracilis elongatus saepe curvatus, 1.2–1.6 dm. longus, vix 1.5 mm. crassus. Spatha obscure rubra anguste lanceolata apice longe acuminata basi amplexa, 4–5 cm. longa, usque ad 5 mm. lata. Spadix tenuis anguste cylindricus obtusus, ut spatha obscure ruber, 4–7 cm. longus, 3–4 mm. crassus, stipite tenui 3–3.5 cm. longo ultra spatham longe exserto suffultus. Tepala brevia obtusa. Filamenta spathulata. Ovarium late ovoideum in stilum brevem contractum. —Peru: Bei Yanano, in Wäldern, um 1,800 m. (*Macbride 3734;* bl. Mai, 1923).

Die Art steht dem aus Colombia beschriebenen *Anthurium pulchellum* Engl. sehr nähe, weicht aber von ihm dadurch ab dass die Blattstiele im Verhältnis zu dem Spreiten erheblich länger sind; ausserdem sind die Blätter breiter, die Spathen länger und nicht grünlichbraun, sondern dunkelrot gefärbt.

**Anthurium siccisilvarum** K. Krause, sp. nov.—Caudex assurgens, usque ad 6 dm. longus, internodiis brevibus 3–5 cm. longis; cataphylla linearia mox fibroso-decomposita. Foliorum petiolus tenuis, supra canaliculatus 3.5–4.5 dm. longus, basi 5–7 mm. crassus sursum paullum attenuatus, geniculo circ. 1.5 cm. longo modice incrassato praeditus; lamina coriaceo-herbacea, hastato-triloba, 3 dm. longa vel ultra et subaequilata, lobis posticis patentibus oblongis rotundatis, paullum recurvis, 5–6 cm. latis, lobo antico obovato-lanceolato apice breviter acuminato, basin versus angustato, costis posticis valde divergentibus sinu obtusissimo sejunctis longe denu-

datis, nervis lateralibus pluribus utrinque distincte prominentibus a costa arcuatim adscendentibus prope marginem nervo collectivo tenui paullum distante conjunctis. Pedunculus tenuis 2–3 dm. longus. Spatha lineari-oblonga apice acuminata, basi paullum decurrens, 6–7 cm. longa, 7–8 mm. lata. Spadix stipite tenui circ. 1.5 cm. longo suffultus, anguste cylindricus, apice rotundato-obtusus, leviter curvatus, circ. 1 dm. longus, 5–7 mm. crassus, sursum paullum attenuatus. Tepala oblonga. Staminum filamenta sublinearia. Ovarium late ovoideum in stilum brevem conoideum attenuatum.—Peru: Bei Muña zwischen Felsen in trockenen Wäldern, um 2,300 m. (*Macbride 4048;* bl. Mai, 1923).

Die Art sieht dem aus Colombia beschriebenen *A. denudatum* Engl. recht ähnlich, doch sind die Mittellappen der Blätter nicht lanzettlich sondern mehr verkehrt-eiförmig und noch dem Grunde hin deutlich verschmälert.

**Anthurium Macbridei** K. Krause, sp. nov.—Caudex scandens. Cataphylla magna triangulari-lanceolata longe acutata fibrosa-dilacerata. Foliorum petiolus semiteres supra canaliculatus, usque 1.5 m. longus; lamina coriaceo-herbacea elongato-cordiformis, apicem versus sensim angustata, summo apice in cuspidem acutam angustam 2–2.5 cm. longam contracta, basi rotundata, in toto usque ad 9 dm. longa, 7 dm. lata; lobus anticus quam postici circ. duplo longior, nervis lateralibus primariis 6–8 supra prominulis vel paullum impressis subtus distincte prominentibus inter se venis tenuioribus reticulatis conjunctis demum in nervum collectivum a margine 4–8 mm. remotum exeuntibus percursus; lobi postici rotundati sinu lato obtuso sejuncti, costis posticis in sinu 6–8 cm. vel ultra denudatis. Pedunculus teres, 6–8 dm. longus, basi circ. 1.5 cm. crassus sursum attenuatus. Spatha anguste oblonga apice subacuminata 1.5–2 dm. longa, 4–6 cm. lata. Spadix brunneo-purpureus stipite 1.5 cm. longo spathae paullum adnato suffultus, anguste cylindricus, apice rotundato-obtusus, 2–3 dm. longus vel fructifer longior, 1–2 cm. crassus sursum attenuatus. Tepala late oblonga obtusa. Pistilla subovoidea stigmate rotundato paullum elevato coronata.—Peru: Huacachi bei Muña um 2,150 m. (*Macbride 4110;* bl. und fr. Mai, 1923).

Verwandt mit *A. corallinum* Poepp., doch sind die Blätter breiter und grösser und die Spathen nicht linnearlanzettlich sondern mehr länglich.

**Sisyrinchium palustre** Diels, sp. nov.—Humilis, fibris vetustis nullis. Caulis ex axilla folii sui egressus quasi lateralis, nudus, anceps, 3–6 cm. longus, apice subspatha geniculatus. Folia rosulato-conferta, herbacea, basi latissima vaginantia, ibique hyalino-marginata, apicem versus sensim angustata acuta, 3–7 cm. longa. Spatha circ. 1.5 cm. longa, folium inferum acutum, superiora breviora, hyalino-marginata. Flores 2–5, pedicellati, pedicellis gracilibus ad 1 cm.

exsertis. Petala lutea. Stamina praeter basin libera.—Peru: Chasqui, in paludibus subalpinis, flor. 10 April, 1923 (*Macbride 3308;* Typus speciei!).

Differt a *S. Jamesonii* Bak. affini collo non fibroso, foliis basi latis herbaceis, a *S. trinervi* Bak. staminibus vix connatis.

**Weberbauera spathulifolia** (Gray) O. E. Schulz, var. **integrifolia** O. E. Schulz, var. nov.—Omnia folia integra vel vix dentata. —Peru: In rocks, uplands, Río Blanco, May 8–19, 1922, *Macbride & Featherstone 811* (Type, Field Museum).

**Sisymbrium oleraceum** O. E. Schulz.—Adde descriptioni speciei in Engler, Das Pflanzenreich Heft 86. (1924) 74: Planta fructifera 0.55 m. alta. Siliquae in pedicellis 15–12 mm. longis rectangule patentibus sursum curvatae, lineares, 4–4.5 cm. longae, subcompressae, 1.5 mm. latae, stylo 1 mm. longo coronatae; valvae basi obtusae, apice acutae, trinerves. Semina uniseriata, oblonga, 1.5:0.7:0.33 mm., dilute brunnea, laevia.—Peru: Huancalli, Dept. Cuzco, *Pennell 13714.*

**Sisymbrium Weberbaueri** O. E. Schulz, sp. nov.—Planta suffruticosa, 30 cm. alta, pruinosa. Caulis breviter flexuosus, densiuscule foliosus, superne ramosus, ima basi pilis simplicibus rigidulis parce obsitus; rami erecto-patentes. Folia caulina inferiora mediaque pinnatipartita, 3–4-juga, basi semiamplexicaulia, lobis linearibus acutiusculis integris terminali elongato lateralibus a rhachi latiuscula subrectangule patentibus inter se remotis et inaequilongis imis minutis, infima disperse pilosa et apice loborum setulosa; folia superiora angustiora, linearia, remote dentata vel integra, basi biauriculata. Racemus florifer laxiusculus, 10–20-florus. Pedicelli erecto-patentes, 7–5 mm. longi. Sepala suberecta, fere 5 mm. longa, oblonga, apice obtusa, pallide viridia, late hyalino-marginata, interiora basi parum saccata. Petala alba, 8 mm. longa, anguste obovato-cuneata, apice subtruncata. Stamina 5.5–6 mm., antherae 1.8 mm. longae. Glandulae nectariferae laterales semiannulares, cum medianis torosis confluentes. Pistillum anguste cylindricum; ovarium ovulis ca. 60; stylus 1 mm. longus; stigma majusculum, capitatum, tandem, subbilobum.—Peru: In rocks between Moquegua and Torata, Prov. of Moquegua, 1925, *Weberbauer 7426* (Type, Field Museum).

*Nota.* Ad sectionem *Amerophyllum* Fourn. pertinet. Inter affines foliis pinnatipartitis et pilis simplicibus excellit. Siliquae desiderantur.

Dr. Weberbaur noted a white wax which apparently is deposited by some agent on the fleshy leaves.

**Cremolobus Paysonii** O. E. Schulz, sp. nov.—Herba annua, ca. 20 cm. alta. Caulis erectus, acutangulus, glaber, superne ramosus; rami erecto-patentes. Folia caulina inferiora in specimene

unico fructifero nulla (desiccata), superiora oblanceolata, acuta, basin versus cuneatim angustata, utrinque dentibus 2–4 inaequalibus grosse dentata vel subpinnatifida, glabra. Racemus 20–40-florus. Sepala 2 mm. longa. Petala paullo longiora. Racemus fructifer densiusculus. Fructus in pedicellis patulis 4–8 mm. longis, gynophoro 1.2 mm. longo et stylo aequilongo praediti, didymi; fructus partialis orbicularis, 4 mm. diam., centro pilosus, ala lata margine ciliolata et irregulariter obtuse dentata vel sinuato-repanda cinctus.

A *C. chilensi* DC. fructibus majoribus alis latioribus dentatis (nec integris) circumdatis differt.—Peru: Moist swales on northern mountain side, Matucana, Dept. of Lima, April 12–May 3, 1922, *Macbride & Featherstone 211* (Type, Field Museum).

The white flowers of this little annual were rather conspicuous. Its name is in memory of Edwin Blake Payson.

**Descurainia Macbridei** O. E. Schulz, sp. nov.—Hibernanti-biennis. Caulis erectus, sub anthesi 0.20–0.60 m. altus, a basi longe ramosus, dense foliosus, pube ramosa substellata brevi densa canescens; rami suberecti. Folia pro rata minuta, bipinnatisecta; basalia desiccata; caulina inferiora breviter petiolata, ambitu oblongo-elliptica, 6–8-juga, lobis ovatis lateralibus alternantibus superioribus subdecurrentibus mediis sessilibus inferioribus breviter petiolulatis lobulis utrinque 3–4 obovatis obtusis superioribus integris inferioribus saepe unidentatis instructis; caulina superiora subsessilia, subconformia, sed lobulis acutiusculis; omnia pube caulis obtecta, incana, 6–1.5 cm. longa, 1.6–0.8 cm. lata. Racemus initio densissimus et capitiformis, dein elongatus, usque 130-florus. Pedicelli 2–4 mm. longi. Sepala 2 mm. longa, late oblonga, obtusa, ad apicem obscure purpurea. Petala 3 mm. longa, pallide flava, anguste obovato-cuneata. Stamina 1.8–2 mm.; antherae 0.25 mm. longae. Ovarium ovulis ca. 40. Siliquae breves, in pedicellis 8–3 mm. longis axi plus minusve adpressae, breviter oblongae, apice obtusiusculae, 6–7 mm. longae, 1.5–1.8 mm. latae, stigmate sessili coronatae, viridulae; septum saepe fenestratum. Semina oblongo-ellipsoidea, 0.6 mm. longa.—Haec planta pulchra est quasi intermedia inter *D. myriophyllam* (Willd.) R. E. Fries et *D. athroocarpam* (Gray) O. E. Schulz; a *D. myriophylla* racemo multo densiore et siliquis brevioribus et foliis minoribus, a *D. athroocarpa* habitu majore et racemo elongato recedit.—Peru: In rock crevices and on bunch-grass slopes, Huaron, Dept. of Junín, June 12, 1922, *Macbride & Featherstone 1121* (Type, Field Museum).

**Nectandra Macbridei** O. C. Schmidt, sp. nov.—Arbor pauciramosa ca. 20-pedalis. Rami hornotini tomentelli, vetustiores cortice griseo leviter striato-canaliculato. Folia petiolis 1.5–1.8 cm. longis, crassis, supra canaliculatis (interdum tomentellis); lamina anguste elliptica vel lanceolata, 19–42 cm. longa et 6–16 cm. lata, apice angustata, acuminata, basi angustata, acuta, supra subtusque glabra

(juniora dense brevi-pilosa), supra nitida, subtus opaca, coriacea; nervus medius supra impressus, subtus prominens; nervi laterales utroque latere mediani 15–19 sub angulo ca. 40–50° rarius –60° abeuntes supra leviter impressi, subtus prominentes, cum nervo medio reti supra vix subtus tenuiter modo conspicuo conjuncti. Inflorescentiae paniculae amplae axillares, multiflorae, tomentellae; flores in cymis conferti. Flores extus tomentelli plus minusve 5 mm. longi; lobi subovales, plus minusve 2.2 mm. longi apice leviter acuminati, tubus subobconicus obsolete modo conspicuus vix 1 mm. longus; stamina ser. exteriorum rotundato-subquadrata, plus minusve 0.8 mm. longa, obscure modo (vix 0.1 mm. longe) stipitata, apice mucronulata, ser. III. basi glandulis binis magnis aucta; ovarium subglobosum plus minusve 0.8 mm. longum, glaberrimum, apice in stylum plus minusve 0.8 mm. longum stigmate obtuso contractum.—Peru: Río Huallaga Canyon, below Río Santo Domingo, alt. about 4,000 feet, in 1923, *J. F. Macbride 4228* (Type, Field Museum).

Die Art ist nach Mez' Übersicht verwandt mit der auch in Peru vertretenen *N. pulverulenta* Nees, die sich durch bedeutend grössere Blüten (9 mm.) mit scharf abgesetztem, krugförmigem Tubus auszeichnet. Zudem besitzen deren stark bereifte Blüten einen Griffel der doppelt so lang als das ovarium ist. Endlich sind die Infloreszenzen von *N. pulverulenta* im Verhältnis zu denen von *N. Macbridei* nur armblütig. Die Nebenachsen der Infloreszenzen von *N. Macbridei* sind Dichasien, mit oft nur verkümmerten oder fehlenden Endblüten.

**Cedrela Weberbaueri** Harms, sp. nov.—Arbor, ramulis puberulis vel pubescentibus, juvenilibus dense velutinis; folia pinnata, rhachis cum petiolo circ. 5–7 cm. longo dense velutino-tomentella, circ. 10–20 cm. longa, tenuis, foliola 3–4-juga, opposita, brevissime petiolulata, ovato-oblonga vel late oblonga vel ovata, basi saepissime obliqua subito in petiolulum latere postico breviorem quam antico circ. 2–5 mm. longum contracta, apice saepe breviter acuminulata, vel obtusiuscula, supra sparsius velutino-pubescentia, subtus dense tomentella, 5–9 cm. longa, 4–6 cm. lata; foliola in specimene Macbrideano multo majora, basi potius oblique late rotundata, supra sparsius pilosula, subtus laxius tomentella, 6–16 cm. longa, 5–9 cm. lata; inflorescentiae rhachis in specimene Macbrideano dense velutina; capsula breviter crasse pedicellata, valvae 5–5.5 cm. longae, 1.2–1.5 cm. latae, parce lenticellatae, columna 4–4.5 cm. longa, semina deorsum late alata, 2–2.5 cm. longa vel ultra.—Peru: Dept. Huancavalica, Prov. Tayacaya, 11° 55′ S., linke Talwand des Flusses Mantaro zwischen Huancamayo und San Gregorio, Savanne, 1,700–1,800 m., *Weberbauer 6568;* 5. IV. 1913; nur Blätter; 3 m. hoher Baum, gelegentlich höher. Yanano, Dept. Huánuco, *Macbride 3800;* V. 1923; etwa 10 m. hoher Baum, mit Früchten.

Die von Weberbauer angegebenen Früchte sind verloren gegangen; daher konnte sein Exemplar bisher nicht benannt werden. Das

Examplar von Macbride hat Früchte; es stimmt in der Form und Behaarung der Blätter gut mit dem Exemplar von Weberbauer überein, nur dass Macbride ein älteres grösseres Blatt gesammelt hat. Die Art ist bemerkenswert durch die relativ breiten stark behaarten Blätter. Vorläufig ist es nicht möglich, ihre Beziehungen zu den bekannten Arten anzugeben, da die Blüten fehlen.

## UEBER DIE RHAMNACEEN GATTUNG SCYPHARIA MIERS

A. WEBERBAUER

Als ich die Rhamnaceen für Engler-Prantl, Natürl. Pflanzenfam. bearbeitete, stand mir kein Material von *Scypharia* zur Verfügung. Daher liess ich diese Gattung, Miers und Bentham-Hooker folgend, als zweifelhaft bei den *Colletieae*. Später hatte ich im Küstengebiete Perus oft Gelegenheit, die dort häufige *Scypharia senticosa* (HBK.) Miers an ihren Standorten zu untersuchen und stellte fest, dass dieser Strauch niemals seriale Beisprosse bildet (was übrigens auch aus den Tafeln von Miers zu erkennen ist), somit nicht zu den *Colletieae* gehören kann. Aus Herbar-Studien ergab sich, dass *Scypharia senticosa* in die Gattung *Scutia* §II *Orthacantha* zu stellen ist. Somit werden folgende Namensänderungen notwendig.

**Scutia spicata** (Willd.) Weberbauer, comb. nov. *Colletia spicata* Willd. ex R. & S. Syst. 5: 513. 1819. *Rhamnus senticosa* HBK. Nov. Gen. & Sp. 7: 42. 1825. *Sageretia senticosa* Brongn. Ann. Sci. Nat. 10: 360. *Scypharia senticosa* Miers, Contrib. 1: 301, u. Taf. 42. *Scutia maritima* Perkins, Engl. Bot. Jahrb. 45: 464. 1911.

Dieser immergrüne, bis 3 m. hohe Strauch ist von Süd-Ecuador bis Süd-Peru (Gegend von Chala) charakteristisch für das trockene Küstenland. Er bildet oft kleine Bestände für sich allein und gehört zu jenen Holzgewächsen, deren tiefgehende Wurzeln das Grundwasser erreichen. Seine verticale Verbreitung ist am ausgedehntesten in Centralperu, wo sie bis 1,600 m. aufwärts reicht. Das Volk nennt ihn "lipe" in Nordperu (Gegend von Piura) und "muchilco" in Sudperu (Gegend von Chala).

**Scutia guayaquilensis** (HBK.) Weberbauer, comb. nov. *Rhamnus guayaquilensis* HBK. Nov. Gen. & Sp. 7: 55. 1825. *Rhamnus decussatus* R. & P. in herb. Lambert. *Sageretia guayaquilensis* Brongn. Ann. Sci. Nat. 10: 360. *Scypharia guayaquilensis* Miers, Contrib. 1: 300, u. Taf. 42.

Unterscheidet sich von der vorgenannten durch die Form der Blätter.

**Scutia pauciflora** (Hook. f.) Weberbauer, comb. nov. *Discaria pauciflora* Hook. f. Trans. Linn. Soc. 20: 229. 1851. *Scypharia parviflora* Miers, op. cit. 301 u. Taf. 42. *Discaria parviflora* Hook. f. ex Miers, l. c.

Unterscheidet sich von *S. spicata* durch die gestielten Blüten.

Ausser den drei genannten Arten der Gattung *Scypharia* beschreibt Miers (op. cit. 302 u. Taf. 42) noch eine vierte, für ihn zweifelhafte Art: *Scypharia tetragona*. Diese Pflanze halte ich für identisch mit der Verbenacea *Citharexylon spinosum* HBK.

Die Gattung *Scypharia* ist somit zu streichen.

Ich möchte noch hinzufügen, dass bei *Scutia spicata* ebenso wie bei der ihr nahe verwandten *S. arenicola* (Casar.) Reiss. die Blüten einen dünneren Discus haben als bei *S. buxifolia* Reiss.

## 2. LEGUMINOSAE, ESPECIALLY OF THE GENERA PAROSELA AND PSORALEA

**Parosela.**—Since the publication of a tentative key to the South American perennial species of *Parosela* or *Dalea* (Field Mus. Bot. 4: 100. 1927), I have seen additional material, including the many types in the herbarium at Berlin-Dahlem. It may now be recorded that, in general, the presence or absence of pubescence, especially in the inflorescence, is not always as significant as has appeared, since several species possess this "character" in varying degree. Others, on the other hand, at least so far as known, exhibit it with constancy. Obviously, a larger series of specimens is needed to determine surely the validity or true character of many species, but the nature of the calyx lobes, the size of the flowers, the number of leaflets, the persistence of the bracts, and the degree of pubescence on the mature leaves are usually "constant" and therefore diagnostic characters. Often important, also, are the color of the flowers and the habit of the plant.

A realignment of the species, with the recognition of several as only varieties, may await the possible action of the next botanical congress in determining finally the name for the group. Apparently the sponsors of the International Rules favor, in this, as, curiously enough, in some other cases,[1] a technical interpretation of the Rules that will result in a complete overthrow of established nomenclature, illogical and inane though such action is. I have already called attention to the technicalities involved (Field Mus. Bot. 4: 5. 1927).

[1] Cf. Journ. Wash. Acad. Sci. 19: 247–252. 1929.

**Parosela nova** (Ulbrich) Macbr. Field Mus. Bot. 4: 110. 1927.

This species, which I knew only from description, was incorrectly interpreted. It resembles *P. boliviana*, but is probably distinguishable by the very short calyx teeth, which are hidden in the dense calyx pubescence. Furthermore, in habit it is surprisingly like the shrubby *Dalea samancoensis*, included, at least in a broad sense rightly, in *P. cylindrica*.

**Parosela calocalyx** (Ulbrich) Macbr., op. cit. 104, is, I think, not distinguishable specifically from *P. cylindrica*. The bracts and calyx in the type specimens vary from glabrous to slightly pubescent.

**Parosela microphylla** (HBK.) Rose, Contr. U. S. Nat. Herb. 10: 106. 1906.

From the Humboldt specimen, in the Willdenow Herbarium, of this obscure but well-named species, it is apparent that the plant was definitely shrubby, probably sprawling. Its leaflets are one to rarely two mm. long, only two to four pairs, obovate, retuse, and glabrous to lightly pubescent. The spikes are cylindrical-oblong but only 1–1.5 cm. long; calyx densely hairy, the ovate-lanceolate-acuminate teeth at least one-half the length of the tube; bracts pubescent; flowers broken but apparently 6–7 mm. long. In my key it would be sought with *P. humifusa*, *P. catatona* and *P. peruviana*. Its tiny leaflets separate it from the first and last, and its habit, fewer leaflets, and more numerous flowers from *P. catatona*.

**Parosela exilis** (DC.) Macbr. Field Mus. Bot. 4: 103. 1927, is probably the earlier name for *P. vicina* Macbr., l. c. Dr. I. M. Johnston has very kindly examined for me the type of the former, and from his detailed description and sketch its identity seems certain. The unusual character of diverse bracts in the same head which DeCandolle emphasized as important and upon which I accordingly maintained the species, proves to be an abnormal development in one inflorescence only, in which the lower flowers have aborted. Their bracts, however, have developed, and, with revolute margins, they at least appear to be lance-revolute, while those subtending the flowers are obovate-rotund and abruptly caudate, as in the other inflorescence. The diverse bracts are, therefore, as Johnston remarks, "accidental." My variety *brevis* of *P. microphylla* is also to be referred to this species (that is, to *P. vicina*). Two sheets of *Weberbauer 6350* in Herb. Berol., upon which specimens the latter was based, are, in part, entirely glabrous.

**Dalea tapacariensis** Harms ex Kuntze, Rev. Gen. 3: 59. 1898.

I referred this, doubtfully, to *Parosela pazensis*. The type is a very young plant, but I think it is more nearly allied to *P. peruviana*. It has, however, very different calyx teeth, as they are linear-subulate and scarcely 0.5 mm. long. *Dalea retusifolia* Harms, l. c., is *P. boliviana* as I suggested, op. cit. 106.

**Parosela astragalina** (HBK.) Killip, Field Mus. Bot. 4: 109. 1927.

This is certainly not distinguishable from *Dalea Mutisii* and, presumably then, from *P. coerulea*. The characters relied upon by me to separate these forms break down completely in any considerable series of specimens. The closely related *P. ayavacensis* is fairly well marked, but chiefly by its larger flowers and consequently thicker spikes. As in *P. coerulea*, the degree of calyx pubescence (to its complete absence) is here of no taxonomic significance. *Dalea cutervoana* Szysz. in Rozpr. Akad. Uniej. Krakov. Ser. 2. 9: 221. 1895, not included in my key, is also, from description, referable to *P. coerulea*. It was based on *Jelski 224* from Cutervo, Cajamarca, Peru.

**Psoralea.**—The opportunity to study the large African collections of this genus in the herbarium at Berlin-Dahlem has enabled me to consider further the matter of generic limitation for the group, an undecided problem (from my viewpoint) since Dr. Rydberg's segregation (N. Am. Fl. 24. 1919). Although in 1922 (Contr. Gray Herb. 55: 14, and again in Field Mus. Bot. 4: 86. 1925) I questioned the expediency of his treatment, I had not seen any considerable number of Old World species. In the meantime Dr. Rydberg has presented a discussion of his segregation (Journ. Am. Bot. 15: 196–203. 1928), which shows clearly the complete dovetailing of the characters of fruit with all the others proposed by him as having value for purposes of generic definition.

However, I still hoped that possibly there was a natural division basable on the single salient group character, viz. the adherence or non-adherence of the pericarp to the seed. The dehiscence or non-dehiscence of the fruit is, of course, merely a manifestation of this unit character. But, as Rydberg himself shows, the character is not uniformly well-marked when all species are considered. In *Hoita*, as he suggests, the pod may surely dehisce finally, and species like *Psoralea spicata* and *P. caffra* are doubtfully assignable to any of the segregates as yet proposed. Other Old World species which

possess further perplexing combinations of characters—to mention only a few—are: *P. obtusifolia, P. acaulis, P. drupacea, P. patens* and *P. plicata, P. foliosa, P. tomentosa* and *P. Zeyheri.*

The persistence and enlargement of the style is sometimes a striking development, but unfortunately it is associated with both dehiscent and indehiscent fruits; and in the case of the former the dehiscence itself varies from valvate to irregular, so its significance as a character is obviously unimportant. Then, too, the style, when persistent, develops in greatly varying degree; cf. *P. cuspidata,* with a scarcely recognizable "beak," as such. And there is much variation in the pod elsewhere in the genus.

Therefore the problem resolves itself into an interpretation of the value of certain characters for purposes of generic limitation, and as such an analysis is, of necessity, largely a matter of personal opinion, the foregoing remarks are not to be construed as in disapprobation of the sincere work of a botanist whose basic viewpoint is, to begin with, entirely at variance with mine.

*Psoralea,* in the generally accepted sense, is a genus fortunately much better marked than many in its family, but as is so often the case with such genera, it has within itself characters which suggest the feasibility of segregation. However, as Dr. Rydberg himself predicts, more genera than already recognized by him must be "created" if his work is accepted, for truly the characters carefully designated by him occur in many more "combinations." To me it seems unsatisfactory to give generic value to characters which result in segregation, or, for that matter, in union of groups, beyond the bounds of practical convenience. In thus permitting taxonomy to serve a useful purpose for all students of plants, regardless of their special field, one does not sacrifice the indication of the apparent relationships, for sectional groupings serve the same purpose as microscopic genera, with none of the obvious disadvantages of the latter.

The genus *Psoralea* is not as richly represented in South America as I thought in 1925 when few specimens other than my own were at hand for study. It is now evident that the characters relied upon then to distinguish several species are not all constant. However, eight or ten species, fairly well supported by geographic factors, are recognizable unless one wishes to go so far as to include in the typically and probably strictly Chilean *P. glandulosa* such diverse and long-accepted entities as *P. mexicana, P. lasiostachys,* and *P. pubescens.* Surely it is not satisfactory to treat these as mere sub-

species of *P. glandulosa*, which is uniformly and reasonably well marked by its much greater smoothness throughout, its abundant glandulosity, and its small to medium-sized flowers. However, the following changes in the alignment of several species should be made.

**Psoralea lasiostachys** Vog. var. **potens** (Macbr.), comb. nov. *P. potens* Macbr. Field Mus. Bot. 4: 85. 1925. *Hoita versicolor* Rusby, Mem. N. Y. Bot. Gard. 7: 259. 1927.

In its extreme development this plant is readily distinguishable from the typical form of the species, of more southern distribution, by its congested and inordinately stipitate-glandular inflorescence, but in a series of specimens these differences are not always well defined or even concomitant. I misinterpreted, op. cit. 86, the type of *P. lasiostachys*, which is exactly matched by *P. remotiflora* Macbr., op. cit. 113, and nearly by *P. Featherstonei* Macbr., op. cit. 84, *P. yurensis* Rusby, Bull. N. Y. Bot. Gard. 6: 511. 1910, and *Hoita hirsuta* Rusby, Mem. N. Y. Bot. Gard. 7: 260. 1927. The following specimens represent the variety *potens:* Peru: Dept. of Lima, *Weberbauer 174*. Dept. of Junín, *Weberbauer 2342; Macbride & Featherstone 1022*. Dept. of Cuzco, *Herrera 371, 625*.—Bolivia: *Herzog 2090*. La Paz, *Buchtien 33, Seler 94, Hauthal 304*. Cotana, *Buchtien 170*.

*Psoralea mexicana* (L. f.) Vail (*P. Mutisii* HBK.), *P. maleolens* Macbr., *P. divaricata* Willd., *P. munyensis* Macbr., and presumably *P. Trianae* Vail (to judge from the meager description) comprise a group of species distinct from *P. glandulosa* by the densely pubescent calyces, and from all other species by the much smaller flowers—about 6 mm. long—except *P. huigerilla* of Argentina, which also has small flowers but a very different beaked fruit. *P. divaricata* Willd. Enum. 2: 788. 1809 has almost shaggy-villous white-pubescent branches and calyces, flowers scarcely 6 mm. long (about half longer than the calyx), distinctly pedicelled and very openly borne in short racemes, and glabrous, oblong-lanceolate, acutish leaflets. It appears to be very distinct. It is known only from Guancabamba, collected by Humboldt. *P. Trianae* Vail, Bull. Torr. Club 21: 119. 1894, seems to be represented by *Lehmann 4790, 6266*, and *4580* from Ecuador, and by *Weberbauer 4240* from northern Peru. Its narrow, acuminate leaflets and thick, dense inflorescences serve to distinguish it readily from *P. munyensis*, which it most resembles. The latter is well represented, in addition to the type, by *Weberbauer 3197* from the Dept. of Ancash, Peru. The relationships of *P. maleolens* and *P. mexicana* have, I think, been correctly indicated.

The former is nicely distinct from even the smaller-flowered races of *P. glandulosa* by its sessile glands, hirsute calyx, and dark purple, subsessile flowers. It was previously collected in Peru by Dombey, *854*. The latter is known only from Colombia and Ecuador, and its peculiar pubescence is uniformly distinctive.

*Psoralea marginata* Meyen, Reise 1: 436, 1834, is to be referred to *P. pubescens* Pers. Syn. Pl. 2: 347. 1807, as the characters used by me, op. cit. 86, do not hold. The flowers of the type of Meyen's species are actually of medium (about 10 mm. long) size. *Weberbauer 15* from Chorrillos, Lima, is an additional specimen. The branchlets and petioles are densely downy-white-pubescent.

In spite of this generous reduction of names, it seems necessary to add another species to the list, as the plant described below agrees in no very definite way with any of the accepted species. It differs from true *P. glandulosa* in its densely loose-pubescent and short calyx and in its nearly complete lack of the glands which are so abundant on the branchlets and petioles of that species. It is distinguished from all other species, and also from *P. glandulosa*, by the long-pedicellate and recurved flowers. A tendency toward this latter character is sometimes seen in *P. glandulosa*, particularly in cultivated forms, but in this Bolivian plant *all* the pedicels are recurved, even at anthesis. The calyx is very short and the floral parts are very broad.

**Psoralea timorata,** sp. nov., erecta et ut videtur fruticosa; ramulis pedunculis petiolisque dense subadpresse strigillosis haud vel vix cum glandulis sessilibus glanduliferis; petiolo communi vulgo 1.5–2.5 cm. longo; foliolis ovato-acuminatis plerumque 5–6 cm. longis, 2–3 cm. latis, supra glabratis vel costa venisque parce pilosis subtus pallidioribus parce vel mediocriter pilosis; racemis 8–10 cm. longis plus minusve interruptis folio 2-plo longioribus; pedunculis circa 3 cm. longis; pedicellis 1.5–2.5 mm. longis valde recurvatis; floribus plerumque fasciculatis; bracteis ignotis ut videtur prompte deciduis; pedicellis calycibusque dense cum pilis firmis nigris et albis intermixtis strigosis; calycibus 4.5–5 mm. longis; corolla ut videtur purpurea 6–7 mm. longa; vexillo late obovato circa 4 mm. lato; legumina oblique oblonga acuminata 6 mm. longa exserta, dense pilosa.—Bolivia: Tucumilla bei Tarija, March 31, 1904, *Fiebrig 3430* (Type).

**Calliandra tumbeziana,** sp. nov., fruticosa, 3 m. alta; ramulis albis glabris ut videtur divaricatis; foliis ad nodos confertis; stipulis ovato-lanceolatis acuminatis striatis ad basin ramulorum et pedunculorum imbricatis; petiolo cummuni 3–5 mm. longo; pinnis 3–5-jugis plerumque 1.5 cm. longis, rachi dense ciliato-hirsutula;

foliolis multijugis (15–30) glabris vel minute ciliatis, vix nitidulis, oblongo-linearibus acutis, 1.5–2.5 mm. longis; capitulis axillaribus tenuiter pedunculatis; pedunculis glabratis vel paullo pilosis, 2.5–4 cm. longis; floribus sessilibus vel exterioribus breviter pedicellatis corolla calycem plus duplo superante; calyce striato 2 mm. longo, dentibus brevibus obtusis ciliatis; corolla breviter 5-fida glabra praeter apicem ciliata; stamina alba circa 2 cm. longa, tubo corollam breviter vel haud superante.—Peru: Shrub in deciduous bushwood, mountains east of Hacienda Chicama, Prov. and Dept. of Tumbez, Feb. 19–24, 1927, *Weberbauer 7677* (Type, Field Museum).

This species has something of the aspect and, apparently, the habit of *C. expansa* Benth., but in character is nearest *C. prostrata* Benth., from which its long slender peduncles readily separate it.

**Acacia huarango** Ruiz, in herb., *A. tortuosae* peraffinis; fruticosa, diffusa vel prostrata vel suberecta sed semper humilis, ramis pulverulentis, glabratis; spinis stipularibus plerumque 2–3 cm. longis; pinnis 5–10-jugis; foliolis multijugis 1–2 mm. longis; legumine brevissime villosulo crasso oblongo-cylindraceo 7–10 cm. longo, 10–12 mm. lato.—Peru: Low spreading shrub (1 m. or less), Huánuco, *Macbride & Featherstone 1364, 2034; Ruiz.* Prostrate in mats, Chosica, *Macbride & Featherstone 520.* A spreading shrub seldom over 1 m. high, Pariñas Valley, Piura, *Haught F-78.* Trujillo, *Seler 263* (as *A. macracantha*). San Lorenzo, Lima, *Gaudichaud* (as *A. Farnesiana*), and probably also *Weberbauer 3257* (as *A. tortuosa*, var.) from Huaraz, Ancash, described as 3 m. high with spreading umbrella-like top.

In spite of the great variability of *A. macracantha* and *A. tortuosa*, with which species this spreading shrub has been confused, it seems to me altogether unsatisfactory to regard it as merely a form of one or the other of those species. It has the small leaflets (but fewer pinnae) and the fruit of *A. macracantha*, but under the same conditions and at the same localities it remains a sprawling or even a prostrate shrub. *A. tortuosa* typically has the larger leaflets of *A. Farnesiana*. *A. huarango* is common in central Peru, where it is uniformly well known as "huarango."

**Mimosa dichoneuta,** sp. nov., fruticosa, 1–2 m. alta, dense ramosissima; ramulis junioribus gracilibus 2–3 dm. longis, minute strigilloso-puberulis demum glabratis; aculeis dissitis plus minusve recurvis mediocriter numerosis; foliis armatis (aculeolis minutis recurvis) parce strigilloso-puberulis vel supra glabratis, pinnis 4–6-jugis circa 2 cm. longis, foliolis plerumque 12-jugis, oblongis obliquis obtusis vel aliquid acutiusculis, 4–5 mm. longis, 1–1.5 mm. latis; capitulis subglobosis, circa 12 mm. longis; pedunculis circa 1 cm. longis, puberulis; floribus albis 5-meris, puberulis, circa 2 mm. longis; calycibus minutis, vix denticulatis; leguminibus compressi paullo cur-

vatis molliter puberulis 4–7 cm. longis, 8–10 mm. latis margine dense aculeatis (aculeis recurvis) valvis indivisis vel demum articulatis.—Peru: Gravelly river bluffs, Huaraz, Dept. of Ancash, Oct. 6, 1922, *Macbride & Featherstone 2523* (Type, Field Museum).

Reduce the characters of *M. Weberbaueri* Harms of the section *Acanthocarpae* Benth. and the description of that species would read nearly like that of *M. dichoneuta!* There is, however, one contrapositive character, namely, the pubescent flowers of the latter; and as the differences of foliage and pods are, taken together, well marked, the two plants are probably distinct species. Their pods are strikingly similar to those of *M. hamata* Willd., but that apparently allied Asian species has fewer leaflets and is canescently pubescent.

**Mimosa albida** H. & B. var. **erratica,** var. nov., subscandens; ramulis ad apicem adpresse strigillosis et parce setosis; foliolis glabris vel subtus paullo setulosis, praeter marginem adpresse setoso-ciliatum; leguminibus faciebus cum pilis cano-strigillosis et setulosis intermixtis.—Peru: On river valley shrubs, Tambo de Pariocota, Dept. of Ancash, Oct. 8, 1922, *Macbride & Featherstone 2552* (Type, Field Museum). Dept. of Lima, *Gaudichaud.*

In foliage this plant resembles surprisingly *M. obtusifolia* Willd. and *M. Velloziana* Mart., Brazilian species with setose pods. As suggested by Bentham, Trans. Linn. Soc. 30: 390. 1875, several of the species allied to *M. sensitiva* L. could be considered as varieties of one entity. However, they seem reasonably distinct on the characters assigned them by Bentham, although considerable herbarium material has been too loosely named. The plant described here may not be constant in character, but it appears to be as distinct from *M. albida* as is *M. floribunda.* The latter typically is a much coarser species, more hairy and more abundantly flowered, but there are perplexing intermediate forms.

**Cassia helveola,** sp. nov., fruticosa, 1.5–2 m. alta; ramis ramulis petiolis pedunculis pedicellisque inflorescentiarum plus minusve dense, breviter molliterque fulvo-pubescentibus; foliolis plerumque 8–12-jugis, oblongo-ellipticis basi et apice subrotundatis, circa 1.5 cm. longis et 8 mm. latis, glabris vel glabratis praeter marginem et costam subtus subadpresse pilosam; petiolo communi 5–10 mm. longo, glandula convexa, inter juga duo inferiora vel saepius nulla; stipulis minutis setaceis; racemis axillaribus suterminalibusque paucifloris; pedunculis 3–6 cm. longis; rachi plerumque circa 2.5 cm. longa; pedicellis gracilibus circa 1.5 cm. longis; bracteolis ovato-lanceolatis, acuminatis; sepalis coloratis, fulvo-pilosis, circa 4 mm. longis; petalis 8–10 mm. longis; legumine compresso breviter (5–8 mm.) stipitato subabrupte cuspidato circa 9 cm. longo, 1 cm. lato, glabrato vel

parce setoso, inter setas minute pubescente.—Peru: Yanahuanca, Dept. of Huánuco, June 16–22, 1922, *Macbride & Featherstone 1183* (Type, Field Museum). Huaraz, Dept. of Ancash, Oct. 6, 1922, *Macbride & Featherstone 2526*. Montaro Valley, near La Mejorada, Dept. of Huancavalica, March 21, 1926, *Weberbauer 7608*.

This *Cassia* undoubtedly is a member of the Section *Chamaesenna* Benth., Trans. Linn. Soc. 27: 538. 1869, and apparently is related to the species comprising Series *Pachycarpae* Benth., from all of which it differs notably in its soft fulvous pubescence. It may prove to be only a very pubescent variety of one of the too closely allied species of the group.

Dr. Rose undertook the determination of my Peruvian collections in this genus and wrote two unpublished names on the herbarium sheets of the material cited above. However, he subsequently crossed out both names, and I have therefore hesitated to make him responsible for the species, especially since it is in this genus where the interpretation of characters is so difficult, though the plant appears, in fact, to be undescribed.

**Cassia Weberbaueri,** sp. nov., fruticosa, 10 m. alta; ramulis angulato-teretiusculis minute parceque strigillosis; stipulis linearisetaceis; foliis eglandulosis; foliolis 3–5-jugis, petiolatis, membranaceis, subconcoloribus, demum supra plus minusve nitidulis imprimis subtus minute cum pilis crispis strigilloso-pubescentibus, ovato-lanceolatis, acutis vel subacuminatis, 7–10 cm. longis, 3–5 cm. latis (paris inferioris saepius minora); petiolo communi 5–7 cm. longo; racemis axillaribus fere 1.5 dm. longis foliis brevioribus laxifloris; pedicellis gracilibus minute pilosis circa 2.5 cm. longis; sepalis aliquid pubescentibus ovalibus circa 5 mm. longis; petalis 1–1.5 cm. longis; staminibus 5 vel 7, saepius etiam 2 vel 3 reductis, glabris, poris apicalibus dehiscentibus; filamentis aequalibus brevibus; legumine compresso ut videtur stipitato 4.5 dm. longo.—Peru: Plain southeast of Hacienda La Choza, Dept. of Tumbez, Feb. 28–March 3, 1927, *Weberbauer 7709* (Type, Field Museum).

According to Bentham's *Revision of the genus Cassia,* Trans. Linn. Soc. 27: 538. 1869, this species appears to be referable to the Subgenus *Senna* Benth., Section *Chamaesenna* Benth. because of the stamen character—"perfect anthers 7." It has, however, in other respects, more the characters of the Section *Apocuitia* Benth., but its fewer perfect anthers are glabrous. Other sections of the genus to which it might be keyed have glandular leaves or at least subterete pods. The species, therefore, seems to be undescribed, in spite of the fact that it is almost astonishing if a plant with such striking fruits, especially from northern Peru, is yet unnamed.

**Cassia andina** Rose, sp. nov., ad *C. racemosam* vergens, sed sepalis 10–12 mm. longis et antheris ab apice demum longitudinaliter dehiscentibus; filamentis subaequalibus; antheris majoribus arcuatis 10–12 mm. longis, minoribus 5 mm. longis; caetera *C. racemosa*.—Peru: Small forest tree with open crown, about 6 m. high, Cushi, Dept. of Huánuco, June 19–23, 1923, *Macbride 4825* (Type, Field Museum).

Dr. Rose at first referred this plant to *C. racemosa* Mill., which is not uncommon in eastern Peru and which it exactly simulates except for the much longer and finally longitudinally dehiscent anthers. Perhaps the character is not important, but at present there seems to be no alternative but to regard it as significant.

**Cassia latiopetiolata** Dombey ex Vog. Syn. Cass. 29. 1837. *C. versicolor* Meyen ex Vog., l. c.

This species varies considerably, but it is not apparent to me that there are specific or even varietal differences in the many collections which have now accumulated. Dr. Rose, however, has assigned new names to several of my specimens from central Peru. The most striking variation is in the pods. These are sometimes acuminate, sometimes rounded at apex and merely apiculate, with many intermediate developments in form and size in a series of specimens. If several species are really represented, as Dr. Rose thought, it seems strange that there are no correlative characters of flowers or foliage—or, at least, I see none.

**Hoffmannseggia viscosa** H. & A. var. **egena,** var. nov., fruticosa, adscendens vel erecta, glabrata sed parce stipitato-glandulosa; floribus 1 cm. longis; filamentis superne valde glanduliferis, inferne cum pilis vix glandulosis hispidulis.—Peru: Rainy-green formation, mostly annuals, Mt. Estuquina, N. W. of Moquegua, Prov. of Moquegua, March 22, 1925, *Weberbauer 7419a* (Type, Field Museum). Open rocky cliff along river, April 8, 1925, Tiabaya, Arequipa, *Pennell 13073*.

In appearance this plant resembles very greatly *Caesalpinia mimosifolia* Griseb., of Argentina (which is certainly a species of *Hoffmannseggia*), and it is only because the members of the latter group are seemingly so poorly defined that I treat it as merely a variety of *H. viscosa* H. & A. The Hooker and Arnott plant is not uncommon from central to northern Peru in the dryer western foothills of the Andes, where it is uniformly a much more densely stipitate-glandular shrub with definitely smaller flowers. There are, however, two other species which are comparable, in some respects, to our plant, namely, *H. falcaria* Lag.—which probably is unknown

from Peru regardless of the existence of several collections purporting to come from there—and *H. prostrata* Lag. Both of these are typically perennial herbs, the latter flowering as an annual and eventually becoming suffrutescent at base but never shrubby as *H. viscosa* and its variety. Moreover, it appears from herbarium material that the filaments of these species are more glandular to the base, while those of *H. viscosa* and its variety *egena* are mostly glandular only above. *H. prostrata* is a canescent-strigillose plant with no foliage glands.

**Diplotropis ferruginea** Benth. in Mart. Fl. Bras. 15[1]: 321. 1862.

Apparently the first record of this tree for Peru is a collection by Carlos Schunke (*325*) from the Chanchamayo Valley, Department of Junín. Another species of the genus, however, in the sense of Bentham, l. c., has been collected at Soledad, Department of Loreto by Dr. Tessmann (*5209*) and referred by Professor Harms (doubtfully) to *D. Martiusii* Benth. But, according to Ducke, Archiv. Rio Janeiro 31–33. 1915, these trees, so similar in flowers and foliage, and apparently also in aspect, must be regarded as belonging to different genera because of fundamental fruit differences.

Unfortunately his observation is well grounded, considered from a purely logical standpoint, since similar fruit characters are elsewhere in the family a convenient and sometimes a natural basis for generic definition. If one must always be logical, though, in plant nomenclature, one will often find oneself being absurd. When even the generic name can not be told until mature fruit is available, our classification can not be said to be useful. Others than professional taxonomists, perhaps rightly, expect it to be reasonably so, at least in the case of plants with economic or esthetic interest.

**Crotalaria nitens** HBK. var. **trichina,** var. nov., ut videtur annua; foliis supra primo leviter adpresse villosis imprimis ad nervos demum glabratis vel glaberrimis.—Peru: Cerro de Cusilluyoc, Dept. of Cuzco, May 3–6, 1925, *Pennell 14000* (Type, Field Museum).

In its partly glabrous leaves this plant resembles certain Brazilian species, but it seems to me, from the material at hand, to be exactly *C. nitens* in every other respect.

**Lupinus Fieldii** Rose, sp. nov., in herb. Habitu et indumento *L. multifloro* Desr. approximatur; stipulis lineari-setaceis vix 1 cm. longis; foliolis plerumque 9–11, demum 3–3.5 cm. longis et circa 6 mm. latis, subabrupte acutis; racemis anguste cylindraceis, breviter pedunculatis, multi- sed vix densifloris, 1.5–2 dm. longis; bracteis ovato-lanceolato-acuminatis 6–8 mm. longis; pedicellis 1.5–2 mm.

longis; calyce bracteolato, labio superiore bifido (laciniis circa 4 mm. longis) inferiore integro vel ut videtur interdum minute tridentato; floribus lilacinis; vexillum fere 12 mm. longum in parte mediana lutea longitudinaliter plicata extus superne pubescens; alae obovatae circa 14 mm. longae, carina aequilonga; legumine (fere 2 cm. longo) dense rufo-villoso, ut videtur 3–4-spermo.—Peru: Steep short-grass slopes, Morococha, Dept. of Junín, May 23, 1922, *Macbride & Featherstone 876* (Type, Field Museum). Near Yauli, Dept. of Junín, *Weberbauer 351*. La Oroya, Dept. of Junín, *Weberbauer 2576*.

It gives me pleasure to publish for the late Dr. Rose (under his choice of name) this beautiful species of lupine. Its apparent relationship is with *L. multiflorus* Desr., to which species the Weberbauer collections were referred doubtfully by Professor Ulbrich. The species differs, however, in its entire lower calyx tooth and in its pubescent banner. *Weberbauer 2576* has the lower calyx tooth tridentate but only very minutely so. There is a resemblance to *L. pinguis* Ulbr., but the dense inflorescence of that species is shorter than the leaves and the flowers are glabrous. *L. Fieldii* seems to differ even more fundamentally from all other silvery-pubescent Andean lupines so far described. I found the foliage somewhat ill-scented but the flowers pleasantly fragrant. From a partly contrary observation by Dr. Weberbauer, it seems probable that he confused or rather merged the odor of the foliage with that of the flowers.

**Lupinus andinus** Rose, sp. nov., in herb. Habitu et folio *L. pulvinari* Ulbr. approximatur, sed indumento undique subsericeo; foliolis plerumque 5–7 mm. longis; petiolis ad 2.5 cm. longis; calyce fere 1 cm. longo, ebracteolato, labio superiore bipartito (laciniis anguste ovato-acuminatis circa 4 mm. longis), inferiore valde bidentato; vexillum anguste obovatum circa 12 mm. longum, alae oblongae fere 11 mm. longae, carina aequilonga; legumen ignotum.—Peru: Steep short-grass slope, Morococha, Dept. of Junín, May 23, 1922, *Macbride & Featherstone 884* (Type, Field Museum). Upland slope, Río Blanco, Dept. of Lima, *Macbride & Featherstone 810* (?).

Among the several collections of *Lupinus* made by me in Peru which Dr. Rose indicated (in the herbarium) as new is this one which seems to represent an undescribed species. I have, therefore, indicated the apparent relationship and chosen a name, since the one scribbled on the sheet by the author is untenable. Except for the vastly different calyx and more appressed pubescence, the species is similar to *L. pulvinaris* Ulbr. Bot. Jahrb. 39: 541. 1906.

**Lupinus huaronensis,** sp. nov., perennis herbaceus, fere undique (praeter bracteas) breviter vel subadpresse pilosus sed haud lanuginoso-villosus; caulibus robustis erectis adscendentibusve

saepius numerosis, dense et molliter pubescentibus; foliolis 8–13, oblongo-lanceolatis, acutis (ad basin angustatis) majoribus circa 5 cm. longis et fere 1 cm. latis, junioribus densissime pilosis; petiolis gracilibus vel mediocriter robustis, 1–1.5 dm. longis parce cum pilis subpatulis brevibusque pubescentibus, ad basin paullo dilatatis; stipulis circa 1.5 cm. longis, lineari-subulatis; racemis robustis breviter pedunculatis densifloris fere cylindraceis, 2–2.5 dm. longis; bracteis lineari-subulatis 12–13 mm. longis villoso-pilosis; pedicellis 2–3 mm. longis; calycis (bracteolati) labio superiore profunde bifido, inferiore integro vel minute et obscure emarginato fere 8 mm. longo; floribus ad fere 1.5 cm. longis, glabris; vexillum album, subobovatum apice vix emarginatum longitudinaliter plicatum, 13 mm. longum et 9 mm. latum; carina et petala intense lilacina circa 14 mm. longa; legumine molliter piloso, 3 (–4?)-spermo, 12 mm. longo.—Peru: Rocky slope, Huaron, Dept. of Junín, June 12, 1922, *Macbride & Featherstone 1141* (Type, Field Museum).

Old plants were much branched circularly from the base, forming large subcespitose clumps. The species is apparently comparable to *L. alopecuroides* Desr. and to *L. nubigenus* HBK., but it has the entire or subentire lower calyx lip of *L. Weberbaueri* Ulbr. The latter, however, is an inordinately villous plant, and the former two are extraordinarily lanuginose. In pubescence *L. huaronensis* reminds one of *L. pinguis* Ulbr., which has entirely different bracts and an inflorescence shorter than the leaves. Of course this and other apparent segregates of the earlier described species may prove to be merely variants, a fact suggested by the existence of a lupine similar to *L. huaronensis* in pubescence but with the elongate bracts and 3-toothed lower calyx tooth of *L. alopecuroides*. Perhaps it should be treated as yet another species, but it seems more practical to regard it as a variation of the plant just described, so it may be called:

**Lupinus huaronensis** Macbr. var. **pascoensis,** var. nov., ut *L. huaronensis;* foliolis plerumque 12, demum supra glabratis; stipulis lanceolato-linearibus ad 3.5 cm. longis; bracteis 15–17 mm. longis; calycis labio inferiore tridentato; floribus vix 1.5 cm. longis; vexillum album acutiusculum, circa 12 mm. longum; carina et petala pallide caerulea.—Peru: Cerro de Pasco, Dept. of Junín, March 28, 1923, *Macbride 3056* (Type, Field Museum).

To continue the argument above regarding this plant, I think, at any rate, that the denticulation of a calyx tooth—a character upon which so much importance has been placed in *Lupinus*—is a trivial difference upon which to base or maintain a "species" unless it is accompanied by other distinctive features.

**Lupinus visoensis,** sp. nov., fruticosus erectus ramosissimus foliosus 1 m. altus; ramis ramulisque aliquid tortuosis, glabris vel junioribus adpresse strigosis; petiolis (circa 5 mm. longis) foliolisque subtus leviter sericeo-pubescentibus; foliolis 5–8, oblongo-obovatis vel spathulatis abrupte apiculatis, circa 1 cm. longis, 4 mm. latis, supra glabris; racemis brevibus ad apices ramulorum breviter pedunculatis; floribus subverticillatis; pedicellis (6 mm. longis) bracteis calycibusque pilis patulis firmiusculis fulvescentibus dense obtectis; bracteis ovato-acutis circa 2.5 mm. longis; calycis labio superiore late emarginato, inferiore integro; corolla caerulea; vexillum fere orbiculare 14 mm. longum medium longitudinaliter plicatum luteum, extus superne valde sericeo-pubescens; alae fere 13 mm. longae, 7 mm. latae, late obliquae ovatae acutiusculae; carina aequilonga; legumen ignotum.—Peru: Rocky grassy knolls, Tambo de Viso, Dept. of Lima, May 5–14, 1922, *Macbride & Featherstone 596* (Type, Field Museum).

This segregate of *L. Smithianus* HBK. and *L. Taurus* Benth. differs especially in its elongate pedicels, dense inflorescence pubescence, and merely deeply emarginate upper calyx tooth. The plants seen were round bushes with fragrant, light, but bright blue flowers.

**Lupinus microphyllus** Desr. var. **chavanillensis,** var. nov., fere undique dense hirsuto-villosus; foliolis cuneato-obovatis circa 3 vel rare 5 mm. longis; floribus glabris, 1 cm. longis; calycis breviter bracteolati labio superiore profunde bifido, inferiore integro; legumine (vix 1.5 cm. longo) dense villoso, ut videtur 3-spermo.—Peru: Dry grassy slopes, Chavanillo, Dept. of Huánuco, August 17–26, 1922, *Macbride & Featherstone 1963* (Type, Field Museum).

The range of variation of the plant commonly determined as *L. microphyllus* is so little understood that this much more pubescent and larger-flowered form is perhaps at present best treated as only a variety.

**Medicago sativa** L. forma **salaverryensis,** f. nov., undique dense cum pilis mollibus albis subadpressis pubescens.—Peru: Cultivated near Salaverry, April 3, 1922, *Macbride & Featherstone 48* (Type, Field Museum).

Noticing that alfalfa carried in Salaverry was of a strange hue, I asked for a bit, which is this specimen. The entire lot was, in the same way, amazingly gray-hairy, to an extent not approached in any specimen in the immense collection of *Medicago sativa* in the Berlin-Dahlem herbarium. Nor later did we find the alfalfa grown in central Peru different from the usual green and glabrate form.

**Coursetia tumbezensis,** sp. nov., fruticosa, circa 4 m. alta, ut videtur paullo ramosa, fere glabra; ramis superioribus gracilibus striatis subherbaceis; stipulis setaceis, circa 5 mm. longis; foliis

breviter petiolatis, circa 1.5 dm. longis; foliolis 15–18-jugis, oblongo-ellipticis abrupte apiculatis, fere 2.5 cm. longis et circa 8 mm. latis, membranaceis, junioribus sericeo-pubescentibus, demum supra glabris, subtus leviter pilosis vel glabratis; racemis axillaribus, longe pedunculatis laxifloris, 2–2.5 dm. longis, minute adpresseque strigillosis; pedicellis gracilibus ad 1 cm. longis; calycis dentibus late ovato-acuminatis, fere 2 mm. longis, tubo brevioribus; floribus glabris purpureis; vexillum late orbiculatum, lateribus reflexis, circa 13 mm. longum; alae obliquae oblongo-obovatae fere 15 mm. longae; carina arcuato-acutiuscula; stylo 8 mm. longo ad apicem longitudinaliter barbato; legumine ut videtur longo haud tortuoso glabro.—Peru: Deciduous bushwood, mountains east of Hacienda Chicama, Dept. of Tumbez, February 19–24, 1927, *Weberbauer 7647* (Type, Field Museum).

The pod is so undeveloped that the generic identity of this bush is uncertain. However, it has the stamens, style, and calyx of *Coursetia*, and I have not been able to match it in the herbarium at Berlin-Dahlem in any of the several closely related genera. Vegetatively it resembles *C. grandiflora* Benth., a species with (comparatively) very pubescent and firm foliage.

**Astragalus Dillinghami,** sp. nov., subpulvinaris aut suffruticosus humillimus et brevirameus; ramis 1.5–3 cm. longis confertissime foliatis; stipulis dense imbricatis ovatis acutis membranaceis villosis basibus persistentibus ramos bene vestientibus; foliis 1.5–2 cm. longis, 4–6-jugis, cum pilis 1.5–2.5 mm. longis dense sericeo-villosissimis; foliolis ovato-lanceolatis acutis, plerumque circa 4 mm. longis et 2 mm. latis; floribus solitariis vel paucis in axillis dense congestis ut videtur sessilibus; bracteis lineari-lanceolatis, circa 5 mm. longis, adpresse villosis; calycis dense subadpresseque sericeo-villosissimi 7 mm. longi, dentibus lineari-setaceis tubo paullo brevioribus; floribus 1 cm. longis; vexillum obovato-ellipticum; alae vexillo fere aequilongae, carina illis parum breviore.—Peru: Stony short-grass slopes on the mountains between Tarma and Morococha, June 1–6, 1922, *Macbride & Featherstone 1052* (Type, Field Museum).

At least twenty species of *Astragalus* are known to grow in Peru, and several others described from adjacent countries, notably from Bolivia, may, of course, be expected. About half of the species possess in common the character of sessile flowers, although sometimes the inflorescence may be so shortly peduncled that this is scarcely discernible. However this may be, no Andean species seen by me (and I have studied a majority of the species) is so strongly shaggy-villous as the plant described here. In some respects it is similar to both *A. Pickeringii* Gray and *A. Urbanianus* Ulbrich, from which it is readily separated by characters of leaves and pubescence.

Accordingly, difficult as it is to understand the species of *Astragalus*, it seems evident that the plant is undescribed. It is appropriate to name this lilac-colored pea-flower for Mr. Dillingham of Morococha, an official of the Cerro de Pasco Copper Corporation, and thereby commemorate not only the hospitality which he so kindly extended to me but also his own love of flowers, particularly sweet-peas, which he successfully grows in his greenhouse nearly on top of the Andes. Except for the courteous interest of Mr. and Mrs. Dillingham, I should not have obtained this and many other specimens from the vicinity of Morococha.

**Astragalus Richii** Gray, Bot. Wilkes Exped. 414. 1854. *A. macrorrhynchus* Ulbr. Bot. Jahrb. 37: 420. 1905.

Professor Ulbrich of the Botanical Museum, Berlin-Dahlem, through the courtesy of the director, Professor Diels, very kindly sent me recently, among other type fragments, a portion of the original specimen of *A. macrorrhynchus*. I have been sorry to discover that it matches exactly the type of *A. Richii*, which Dr. Robinson lent me from the Gray Herbarium. The several other Peruvian species in this genus described by Ulbrich appear to be valid.

**Astragalus garbancillo** Cav. var. **varus,** var. nov., subacaulis (caulibus circa 5 cm. altis) vel procumbens; stipulis vaginantibus ramorum novellorum subimbricatis; ramis glabratis, basi denudatis; foliolis 21–35 oblongo-obovatis obtusis vel rotundatis minute apiculatis supra glabris subtus parce pilosis circa 5 mm. longis et 2 mm. latis; spica circa 5-flora breviter pedunculata petiolum adaequante; pedunculis fructiferis valde recurvatis plerumque solum 1 cm. longis; calycibus nigro-pubescentibus dentibus subulatis tubo cylindraceo (4 mm. longo) dimidio brevioribus; floribus albidis circa 12 mm. longis; legumine oblongo abrupte apiculato, 7 mm. longo, vix 4 mm. lato, adpresse pubescente, 6–8-spermo.—Peru: Dry stony slopes, 3,500 m., Pomopampa, east of Huaraz, Dept. of Ancash, October 4, 1922, *Macbride & Featherstone 2499* (Type, Field Museum).

This plant evidently is not merely an alpine form of the widely distributed and somewhat variable *A. garbancillo* because in addition to its small size and depressed habit, its very short peduncles are bent down and curved in, a striking character displayed rarely and then only in a small degree in the large series of specimens of *A. garbancillo* which I have seen. The short calyx teeth and small many-seeded pods also are noteworthy characters. Accordingly I have described the plant at some length, as further collections may very probably show it to be a distinct species.

Another variant of *A. garbancillo* is not nearly so well marked as the foregoing, but since it already has a name it may be convenient to accord it status. The typical form of the species, well represented, I think, by *Macbride & Featherstone 945* from La Oroya, Peru, the type locality, has white-pubescent stems. Specimens from elsewhere in Peru, and from Bolivia, are mostly green-stemmed, the pubescence, if present, being so fine that it is not obvious. But, as might be expected of a plant which grows like a weed along trails and near habitations, it is variable in size and in degree of pubescence. Accordingly, the less pubescent form may best be given only varietal recognition as indicated below. *A. unifultus* L'Hér. Stirp. Nov. 168. 1791 (Dec.) is the typical form, at least as regards pubescence, and I think, indeed, is altogether the same. Apparently it was published several months later than *A. garbancillo* Cav.

**Astragalus garbancillo** Cav. var. **Mandoni** (Rusby), comb. nov. *A. Mandoni* Rusby, Mem. Torr. Club 3: 19. 1893.

**Adesmia Augusti,** sp. nov., fruticulosa decumbens ramosissima mediocriter spinosa, haud glandulosa; ramulis novellis adpresse cinereo-pubescentibus, spinis ramosis mox glabratis sed haud nitidis; petiolis (5–10 mm. longis) foliis (laxe 3–4-jugis) pedicellis (4–7 mm. longis) calycibusque dense cum pilis firmiusculis vix patulis sericeo-pubescentibus; foliolis late obovatis acutiusculis, fere 4 mm. longis et 3 mm. latis; calycis 4 mm. longi campanulati laciniis anguste ovato-lanceolatis, circa 1.5 mm. longis, subaequalibus; corolla lutea 8 mm. longa; vexillum extus leviter sericeo-pubescens; alae anguste ovatae vel suboblongae, parce pilosae, longe et tenuiter stipitatae; legumine (immaturo) plumoso-piloso.—Peru: Candarave, Dept. of Tacna, *Weberbauer 7389* (Type, Field Museum).

Although this decumbent shrubby *Adesmia* might be expected to be a Chilean species, I have not been able to refer it to any of the numerous forms recorded there. In fact, it seems to resemble most another Peruvian species, *A. spinosissima* Meyen, from which it differs in its petioled leaves, nearly twice as large leaflets, narrower calyx teeth, and fewer and dull spines. These occur at intervals of 1–1.5 cm., at least twice as remotely as in Meyen's plant. Among Chilean species perhaps related may be mentioned *A. arborea* Bert. with glabrous flowers, *A. leucopogon* Phil. with larger leaflets and a membranous calyx with sublinear teeth, *A. Godoyae* Phil. with subsessile leaves of many leaflets, and *A. erinacea* Phil. and *A. senticola* Phil., both with larger leaflets and, in part, glandular pubescence.

*Adesmia Augusti* was found in a society composed of scattering shrubs, *Cereus,* and herbs. The banner of the yellow flowers was veined with brown. The choice of name is with my friend's permission.

**Aeschynomene tumbezensis,** sp. nov., fruticosa, 3 m. alta, ramosissima; ramulis gracilibus novellis minute strigillosis vel glabratis demum glabris; stipulis anguste ovato-lanceolatis acuminatis 4–5 mm. longis; foliis 4–5 cm. longis, vix confertis; foliolis 6–10-jugis, suboblique oblongis vel oblongo-ellipticis, abrupte mucronulatis, 12–18 mm. longis, 4–5 mm. latis, membranaceis, supra fere glabris, subtus pallidioribus et parce vel vix subadpresse pilosis; racemis brevibus, paucifloris; pedunculis pedicellisque (5 mm. longis) gracilibus, sparse cum pilis strigillosis et hispidulis intermixtis pubescentibus; bracteis bracteolisque parvis, ovatis; calycis vix 4 mm. longi dentibus superioribus tubo dimidio brevioribus; floribus luteis, vix 1 cm. longis; vexillo subrotundato leviter villoso; leguminibus longe stipitatis (circa 8 mm.), articulis firmiusculis glabris circa 1 cm. longis et 8 mm. latis.—Peru: Deciduous bushwood, mountains east of Hacienda Chicama, Dept. of Tumbez, February 19–24, 1927, *Weberbauer 7669* (Type, Field Museum). Between Zorritos and Tumbez, March 8, 1927, *Weberbauer 7746.*

Very similar, if one may judge from description, to *A. Martii* Benth. of eastern Brazil, from which it seems to be distinct by virtue of its fewer, larger and soft and membranous leaflets, elongate stipules, shorter calyx and, probably, broader fruit. From the closely related *A. interrupta* Benth. and *A. platycarpa* Benth. it differs especially in its short calyx teeth as well as in other respects.

**Desmodium distortum** (Aubl.), comb. nov. *Hedysarum distortum* Aubl. Hist. Pl. Guiane 2: 774. 1775. *Meibomia distorta* Schindl. Rep. Spec. Nov. 22: 281. 1926, not 20: 148. 1924.

This is *D. asperum* (Poir.) Desv. according to Schindler, and is represented by my numbers *3988* and *3972* from Muña and Yanano, Huánuco, Peru. Floristically, at least, there is nothing gained by Schindler's segregation of the genus *Desmodium,* op. cit. 20: 136 et seq., and I doubt if the action is justified even from a purely taxonomic standpoint.

**Desmodium micranthum** (Schindl.), comb. nov. *Meibomia micrantha* Schindl. Rep. Spec. Nov. 22: 283. 1926.

This is an exceptionally rank-growing, minutely flowered species, but with the basic characteristics of *D. tenellum* HBK.

**Desmodium Poeppigianum** (Schindl.), comb. nov. *Nephromeria Poeppigiana* Schindl. Rep. Spec. Nov. 20: 283. 1924.

Like the foregoing species, this is known as yet only from Peru, and, to the author, only from a Poeppig specimen obtained in the upper Amazonian region. It is represented also by my collection from Pozuzo (*4649*). It is a close but apparently valid relative of *D. Barclayi* Hook.

**Desmodium Weberbaueri** (Schindl.), comb. nov. *Meibomia Weberbaueri* Schindl. Rep. Spec. Nov. 22: 275. 1926.

This southern Peruvian species is a quite different plant from *D. strobilaceum* Schlecht. of Mexico, with which it has been confused. Especially distinctive are the elongate pedicels. Besides the type from Sandía, it is now known from Cuzco: *Pennell 13954, 14020.* Professor Herrera has collected a similar plant (his *1984*) in Cuzco, but it has smaller leaves and less pubescence. Whether these differences indicate more than an ecological state is open to question, since the known collections of *D. Weberbaueri* are so uniform in character.

**Desmodium delotum,** sp. nov., reptans vel adscendens, plus minusve pubescens, subsuffruticosum; stipulis basi dilatatis striatis ut videtur liberis; petiolis ad 3 cm. longis; foliolis oblongo-ovatis vel ovatis acutis, demum 3.5–5 cm. longis, 1.5–3.5 cm. latis, chartaceo-coriaceis, supra nitidulis glabratis, subtus adpresse pilosis praecipue ad nervos; racemis demum elongatis, laxifloris strictis breviter cum pilis fulvis uncinatis pubescentibus; bracteis ovato-acuminatis, saepius paullo conspicuis; pedicellis fructiferis 8 mm. longis; calycibus fere glabris; laciniis lateralibus ovato-acutis, infimo paullo longiore, acuminato; floribus albis, circa 5 mm. longis; leguminis subsessilis, ad 2 cm. longi, sutura superior rectiuscula, inferior leviter sinuata, articulis plerumque 4, interdum obscure sinuato-tortuosis, fere glabratis tumidiusculis, 5 mm. longis, 2 ad vix 2.5 mm. latis.—Peru: Trailing-ascending on gravelly banks, La Merced, Dept. of Junín, August 10–24, 1923, *Macbride 5279* (Type, Field Museum).

The narrow pods seem to separate this plant very definitely from all other Desmodiums, even from the variable *D. uncinatum* (Jacq.) DC., and from all of its numerous relatives, although in other respects it does not appear to be especially distinctive. At any rate, it is not duplicated in the large collection of Desmodiums at Berlin-Dahlem.

**Geoffroya striata** (Willd.), comb. nov. *Robinia striata* Willd. Sp. Pl. 3: 1132. 1800. *Geoffroya superba* H. & B. Pl. Aequin. 2: 69. 1808. *G. Bredemeyeri* HBK. Nov. Gen. & Sp. 6: 379. 1823.

Dr. Weberbauer has recently collected this shrub or small tree in the coastal plain region of Tumbez, Peru. His excellent specimens (*7622* and *7719*) match well the type of *Robinia striata* Willd. by Bredemeyer from Caracas.

**Vicia lomensis,** sp. nov., annua, diffusa vel prostrata, glabra vel superne minute parceque pubescens; caulibus gracilibus 2–3 dm. longis; stipulis 2–4 mm. longis, aliquid hastatis plus minusve

angulato-denticulatis; foliolis saepius alternis 5(3)–7-jugis oblongo-obovatis apice truncatis retusis vel irregulariter denticulatis 5–6 mm. longis et 2.5 mm. latis; cirrho simplici; floribus solitariis, circa 3.5 mm. longis, subsessilibus vel breviter pedicellatis; pedicellis fructiferis vix 2 mm. longis, glabratis; calyce glabrato vel paullo pilosulo circa 2 mm. longo, dentibus subulato-acutissimis subaequalibus; legumine demum glabro, 2–2.5 cm. longo, circa 6 mm. lato.—Peru: Trailing in rocky places on lomas by the sea, Lurín, Lima, September 23, 1923, *Macbride 5943* (Type, Field Museum). Barranco, Lima, October 23, 1902, *Weberbauer 1656*. San Agustín, Lima, September 26, 1909, *Weberbauer 5236*.

The collections of Dr. Weberbauer were referred doubtfully to *V. humilis* HBK. Nov. Gen. & Sp. 6: 498. 1823. That Mexican plant has only two or three pairs of oblong-linear leaflets and twice as long flowers borne on elongate pilose pedicels. There is a very similar plant in Chile (collected by Poeppig and distributed under an unpublished name), and it is apparently matched by a collection from Bolivia (*Buchtien 632*). However this may be, *V. lomensis* seems constant in its distinctive characters of more numerous leaflets and tiny subsessile flowers. It is probably an endemic of the lomas of Peru.

**Vicia Matthewsii** Gray, var. **Lessoni** (Alef.), var. nov., fere glabra; stipulis minutis; foliolis plerumque 4-jugis, anguste oblongis vel interdum subelliptico-oblongis, (1.5)2.5–3.5(4) cm. longis, 3–4(6) mm. latis, obtusis retusisve, aliquid trimucronulatis; racemis paucifloris; floribus 6–vix 8 mm. longis.—Peru: Lurín, Dept. of Lima, *Pennell 12211*. Lima, *Lesson*. Without locality, *Haynie*.

The last two collections are in the Berlin-Dahlem Herbarium under an unpublished generic and specific name. I have not published the name for the author as a species under *Vicia* because my number *3282* from Mito, Peru, is apparently an intermediate form, although the variety typically is well distinguished by its minute stipules, mostly strictly oblong leaflets, and few and small flowers. Occasionally a collection of *V. Matthewsii* approaches the coarser and much hairier *V. andicola* HBK., which seems to be a comparatively rare species, but in general the former is uniform in character and distinct enough.

**Clitoria pozuzoensis**, sp. nov., fruticosa, ut videtur erecta; ramulis foliisque glabris; petiolis 4 cm. longis; foliolis ovatis basi rotundatis apice gradatim attenuato-acuminatis, 7–8 cm. longis, circa 3.5 cm. latis, pallide viridibus chartaceo-membranaceis praecipue subtus prominenter reticulato-venosis, supra vix nitidulis; racemis 3–4 cm. longis plus minusve confertis breviter pedunculatis undique cum pilis fulvis firmiusculis adpressis dense pubescentibus;

bracteis late ovatis, 3–4 mm. longis, pedicello saepius longioribus; bracteolis ovalibus tenuiter striatis subcoriaceis, vix 1 cm. longis; calycis laciniis fere aequalibus late ovatis subobtusis, tubo (18 mm. longo) multo brevioribus; vexillo dense fulvo-sericeo-pubescente, 6 cm. longo; legumine ignoto.—Peru: Pozuzo, Dept. of Huánuco, June 20–22, 1923, *Macbride 4652* (Type, Field Museum).

Notwithstanding the fact that some of the characters relied upon by Bentham, Fl. Bras. 15[1]: 118, to distinguish the species of the section *Clitorianthes* Benth. now, with more material, seem to be of questionable significance, I am unable to include this plant in any of the members of that group, since its proportionate development of bracteoles, calyx, and corolla is so completely at variance. Nevertheless it "keys" to *C. javitensis* Benth., a member of this particular group, but a species totally different from *C. pozuzoensis*.

**Erythrina Lorenoi,** sp. nov., arborea, 7–8 m. alta, praeter inflorescentiam glaberrima; petiolis circa 2 dm. longis; foliolis rotundo-ovatis basi subtruncatis apice acuminatis, 1.5–fere 2.5 dm. longis, 11–16 cm. latis, chartaceis ubique viridibus nervis (saepius 8) nervulisque praecipue subtus prominulis; racemis 2.5–4 dm. longis, glabris vel superne minutissime puberulis; pedicellis fasciculatis, 3–4 mm. longis; calycis lobis irregulariter et late ovatis, 3–5; tubo subcampanulato, circa 7 mm. longo; floribus 2.5 cm. longis; vexillo elliptico-rotundato, 15–18 mm. lato plus minusve (ad 5 mm.) emarginato vel ut videtur interdum integro; alis oblongis, vix 7 mm. longis; petalis valde oblique obovatis, circa 6 mm. latis et vix 12 mm. longis, leviter plus minusve connatis; legumine breviter stipitato, ut videtur carnoso glabro plus minusve inter semina constricto, circa 2 dm. longo (immaturo).—Peru: Cedrobamba, Valle de San Miguel, Cuzco, July 20, 1928, *Herrera 2021* (Type, Field Museum).

Because of the very large, subrotund, nearly square-based leaflets, it does not seem probable that this *Erythrina* of southern Peru is referable to *E. edulis* Triana or to *E. esculenta* Sprague of Colombia, Ecuador, and north-central Peru (the last mentioned has been found at Muña, my *3956*), species apparently uniformly characterized by relatively narrow, ovate leaves, oblique and narrowed at base. Also the flower parts and the pedicels of the species proposed here are shorter.

*E. Lorenoi* is named, with pleasure, at the request of Professor F. L. Herrera, for Dr. Antonio Loreno, associate botanist at the University of Cuzco.

**Cratylia dichrona,** sp. nov., fruticoso-liana; ramulis junioribus dense puberulis demum glabris; petiolis 5–7 cm. longis, molliter pubescentibus; foliolis adultis late ovatis vel subrotundatis, ut videtur obtuse acuminatis, majoribus 8–10 cm. longis, 6–8 cm.

latis, chartaceo-coriaceis supra opacis et cum pilis crispis paullo pubescentibus, subtus dense et molliter villosis; racemis axillaribus elongatis dissitifloris; fasciculis circa 10-floris; floribus purpureis, 2 cm. longis; vexillo glabro praeter apicem leviter sericeo; pedicellis 3–5 mm. longis; bracteolis late ovatis, obtusis, vix 2 mm. longis; calycibus cano-sericeis, 8–10 mm. longis, laciniis latissimis, tubo triplo brevioribus; legumine vix stipitato, circa 1 dm. longo et 12 mm. lato, molliter et dense rufo-velutino.—Peru: La Merced, August 10–24, 1923, *Macbride 5270* (Type, Field Museum).

The foliage of this plant is softly pubescent in the manner of that of *C. mollis* Mart., but it has the silky short-lobed calyx and glabrate flowers of *C. parviflora* (Rusby) Harms. The status of these two closely related species is open to question, but any more satisfactory disposition must await more collections.

**Rhynchosia mantaroensis,** sp. nov., suffruticosa, superne herbacea volubilis; ramis petiolis pedunculisque molliter et breviter rufo-pubescentibus, demum glabratis tenuiter striatis; stipulis ovato-lanceolatis acuminatis, fere 5 mm. longis; petiolo communi circa 2 cm. longo; foliolis rhombeo-deltoideis, subaequalibus, plerumque 3 cm. longis, 2 cm. latis, basi late rotundatis vel subtruncatis apice acutiusculis membranaceo-chartaceis, supra subreticulatis minute et molliter pilosis, subtus cum nervis nervulisque prominentibus glanduloso-punctatis et praecipue ad venas rufo-pilosis; racemis viscido-hispidulo-pilosis, pedunculatis, laxiusculis, circa 10-floris, 6–8 cm. longis; pedicellis 2–3 mm. longis; bracteis caducissimis circa 4 mm. longis; calycis laciniis tubo vix aequalibus, vexillo duplo brevioribus anguste lanceolatis acuminatis, superioribus vix 3 mm. longis; floribus flavis, 10–12 mm. longis; vexillo glabro praeter superne leviter pilosiusculo et nigro-punctato; legumine fere aequaliter oblongo, valde viscido-piloso.—Peru: Rainy-green shrub-wood, Mantaro Valley, near La Mejorada, Huancavalica, March 21, 1926, *Weberbauer 7606* (Type, Field Museum).

Apparently this species is most similar to *R. melanosticta* Griseb. of Argentina, from which it differs in its suffruticose base, viscous pubescence, large flowers, and long-pilose pods.

## 3. PERUVIAN SOLANACEAE

**Nicotiana Leguiana,** sp. nov., *N. tomentosae* peraffinis; foliis utrinque viridibus, subtus paullo pallidioribus haud incano-tomentosis, solum minute pulverulentis; floribus pedunculisque congestis in paniculam terminalem magnam dispositis; corollae limbo late 5-lobato; lobis ovatis subabrupte acutis, 3–4 mm. longis, dense pubescentibus.—Peru: Entre Cedrobamba y la Máquina, Valle de San Miguel, Cuzco, 20 de Julio de 1928, *Fortunato L. Herrera 1991* (Type, Field Museum). Ollantaitambo, Cuzco, *Pennell 13638, Herrera 240.* Urubamba Valley, *Herrera 1687.*—Bolivia: Sorata, *Bang 1625.* Coroico, *Bang 2408.*

*Nicotiana Leguiana*, native to southern Peru and adjacent Bolivia, has long been known to horticulturists of Europe and North America, under the name *N. tomentosa*, as a fine foliage plant where subtropical effects in landscapes are desired.

*Nicotiana tomentosa* R. & P. Fl. Peruv. 2: 16. *pl. 129*. 1799, is a species of central Peru with leaves even at maturity white-tomentose puberulent beneath and with flowers borne in a diffuse panicle of remote and spreading branches, not at all crowded. The corolla of *N. tomentosa* is entirely different from that of the plant described above; its limb is nearly truncate, the lobes being reduced to acute "points" about 1 mm. long. Specimens collected by me on the Marshall Field Botanical Expedition to Peru in 1923, and from the type locality, Muña, agree exactly with the description and plate of Ruiz and Pavón.

If one may judge from descriptions, *N. tomentosa* of horticulture is largely *N. Leguiana*, but apparently true *N. tomentosa* R. & P. has been grown as *N. colossea* André, Rev. Hort. 60: 511. 1888. The flowers of the latter were not described, but from the diagnosis it must be treated as a synonym of *N. tomentosa* R. & P. Its original character has probably been lost in the modification usually resulting to Nicotianas from cultivation and hybridization. However this may be, two distinct species exist today, as shown above, in a native state, and no name has been found certainly available for the one proposed as new. *N. otophora* Griseb. of southern Bolivia is related to the Peruvian species, but it has auricled leaves, loosely panicled flowers, and calyces twice as long (2–2.4 cm.).

**Nicotiana Raimondii**, sp. nov., ut videtur proxima *N. glaucae* sed folio pulverulento et corolla glabra; ramis foliisque subtus dense incano-pulverulentis; foliis supra viridioribus, minute granulo-pulverulentis, obtusis; pedunculis, pedicellis calycibusque dense puberulentis; calyce circa 5 mm. longo, dentibus aequalibus acutis, 1 mm. longis; corolla 3 mm. longa.—Peru: Urubamba Valley, Cuzco, July, 1927, *Herrera 1540* (Type, Field Museum) and *1685*. Ollantaitambo, Cuzco, *Pennell 13665*, *Herrera 233*.

At first glance this species appears to be *N. glauca* Grah., to which two of the specimens had been referred. That *Nicotiana*, however, is consistently, even in cultivation, glabrous and blue-glaucous, with only the flowers and calyces softly pubescent. The calyx teeth are longer. Apparently no other very close relative of this well-known tree *Nicotiana* has hitherto been described. Both *N. glauca* and *N. Raimondii* bear a superficial resemblance to *N.*

*paniculata* L., but the pubescence of the latter is in part viscid, and the shape of its corolla and calyx is fundamentally different.

**Iochroma peruviana** (Dunal), comb. nov. *Chaenesthes gesnerioides* (HBK.) Miers, var. *peruviana* Dunal in DC. Prodr. 13: 488. 1852. *I. gesnerioides* (HBK.) Miers, Hook. Lond. Journ. 7: 346. 1848, as to plant cited.

It seems evident, from description, that this plant, collected by Mathews at Chachapoyas, Dept. of Amazonas, Peru, is specifically distinct from *I. gesnerioides* (HBK.) Miers, known only from central Colombia. Its leaves are described as scarcely more than half as large (about 5 cm. long) and the pedicels as twice as long (about 4 cm.). The orange-red corollas are densely tomentose. The "short" calyx is a character which suggests that this species may rather be a *Dunalia*, but Miers, Hook. Lond. Journ. 7: 347. 1848, remarks "the berry . . . . is almost enclosed by a persistent calyx of very similar form" (to *I. grandiflora* Benth.). This, of course, is the salient—and indeed the only—character of the genus *Iochroma*.

**Dunalia campanulata** (Lam.), comb. nov. *Cestrum campanulatum* Lam. Encycl. 1: 688. 1789. *Lycium aggregatum* R. & P. Fl. Peruv. 2: 45. *pl. 182a.* 1799. *Acnistus aggregatus* Miers, Hook. Lond. Journ. 4: 341. 1845.

This common and somewhat variable South American species has been regarded as the same as the shrub of the West Indies known as *Acnistus arborescens* (L.) Schlecht., but all the material I have seen from western South America differs uniformly in its scarcely or little exserted stamens and short flowering pedicels, only about 1 cm. long. The original of the Linnean species was based on a specimen of Plumier, and probably came from the West Indies, possibly from Martinique.

If the Peruvian species of *Acnistus* Schott and *Dunalia* HBK. are considered, it becomes evident that the generic characters upon which the genera have commonly been maintained—the clustered funnel-like flowers and unappendaged filaments of *Acnistus*, in contrast to the solitary or paired tubular flowers and appendaged filaments of *Dunalia*—no longer serve to define these two groups naturally. A number of species which were imperfectly known have now been redescribed by Dammer, Bot. Jahrb. 50: Beiblatt 111: 53–58. 1913, together with several new forms, with the result that evidently *Acnistus*, if it is to be maintained, must stand on one character alone, namely, the absence of filament appendages. For several

species of *Dunalia*—that is, species with tooth-like appendages on the filaments—have been described which have clustered flowers, as *D. Trianaei* Damm. or *D. spathulata* (R. & P.) Damm., while every degree of corolla form, from funnelform to tubular, is known, all species of *Acnistus* and *Dunalia* considered. One in particular, *A. dolichostylus* Bitter, Rep. Spec. Nov. 21: 85. 1925, has a narrowly funnelform corolla 2.5–3 cm. long and unappendaged filaments, which, however, are adnate below as in *Dunalia*. So the distinguished author of this species wrote: "Diese Art steht in der Tracht verschiedenen Angehörigen von Dunalia so nahe, dass man sie unbedenklich dieser Gattung anreihen könnte, wenn nicht das Fehlen zahnähnlichen Anhängsel am Grunde der Staubfäden dagegen spräche." But he remarked also on the desirability of monographic treatment of the genera and called attention to the fact that, as in the case of his species, the fruit of many is unknown. It has been collected, however, in some instances, notably for the intermediate species *D. spathulata*, and it displays no character not found also in the fruit and calyx of *Acnistus*. Since, then, the presence or absence of appendages on the filaments is not a character for the natural division of the genus *Cestrum*, and as the character now is unsupported in *Dunalia* by other points of distinction, its continued use for maintaining the later-published *Acnistus* would seem purely arbitrary. Furthermore, the appendages themselves vary greatly in degree of development, from entire to toothed, from smooth to hairy, from short and scarcely discernible to greatly elongate.

The following changes in names for the Dunalias of Peru appear, then, to be necessary:

**Dunalia Weberbaueri** Damm., op. cit., 53.—Very near *D. obovata* and *D. lycioides* Miers, Hook. Lond. Journ. 4: 334. 1845, but the filaments are hairy at base and their appendages twice as long (6 mm.). It is known only from the type, other material so named being better included in *D. obovata* or, if Dammer's specific lines are correct, described as new, the appendages being obsolete. Miers' plant is similar but typically completely glabrous, even to the appendages.

**Dunalia horrida** (HBK.), comb. nov. *Lycium horridum* HBK. Nov. Gen. & Sp. 3: 52. 1818. *Lycium parvifolium* R. & S. Syst. 4: 698. 1819. *Lycioplesium horridum* Miers, Hook. Lond. Journ. 4: 331. 1845.

Distinguished from *D. obovata* and related species chiefly by its exceptionally small leaves, 8–12 mm. long and 4–5 mm. broad.

Its glabrous corollas are only 15–18 mm. long. From the specimen at Berlin-Dahlem it appears to be a very compact, gnarled shrub with many short branches.

**Dunalia dolichostyla** (Bitter), comb. nov. *Acnistus dolichostylus* Bitter, Rep. Spec. Nov. 21: 85. 1925.

This is altogether a typical *Dunalia* except that the filaments are unappendaged; compare the discussion under *D. campanulata*.

**Dunalia solanoides** (Dunal), comb. nov. *Codochonia solanoides* Dunal in DC. Prodr. 13: 482. 1852. *Acnistus multiflorus* Damm. Bot. Jahrb. 37: 636. 1906; Rep. Spec. Nov. 15: 393. 1919.

**Dunalia umbellata** (R. & P.), comb. nov. *Lycium umbellatum* R. & P. Fl. Peruv. 2: 45. *pl. 182b*. 1799. *Acnistus umbellatus* (R. & P.) Miers, Hook. Lond. Journ. 4: 342. 1845.

Rather similar in appearance to the preceding but less pubescent and the calyx 5-toothed. Both species were included in *Acnistus* because of the unappendaged filaments; but compare *D. dolichostyla* above.

**Dunalia obovata** (R. & P.) Damm. Bot. Jahrb. 50: Beibl. 111: 56. 1913.

Dammer has proposed several species which in general appearance are not distinguishable from this plant or from each other, basing them on character of the filament appendages and the presence or absence of pubescence within the corolla tube. As most of them are known only from single collections, more material is needed to discover whether these differences actually indicate the existence of specific entities, which seems doubtful. However, some comparative observations may be recorded.

**Dunalia Besseri** Damm., l. c. *D. angustifolia* Damm., op. cit., 54, is not, I think, distinct. The branchlets are old but at their tips they show traces of the tomentose puberulence which distinguishes *D. Besseri* and *D. spinosa* from other species. Except for the toothed filament appendages, the latter resembles the former.

**Saracha pallascana** (Bitter), comb. nov. *Saracha Weberbaueri* Damm. subsp. *pallascana* Bitter, Rep. Spec. Nov. 19: 267. 1924.

Readily distinguished from *S. Urbaniana* Bitt. & Damm. Rep. Spec. Nov. 17: 442. 1921, and *S. Weberbaueri* Damm. Bot. Jahrb. 37: 638. 1906, by its definitely shrubby habit, much smaller leaves, and greenish-white flowers, blue-based within. The two former

species are more nearly related to each other than to this one, but the first is ciliately pubescent in the manner of the smaller-flowered *S. ciliata* Miers and has shortly acute leaves, while the second is glabrous or essentially so and has leaves which are gradually long- or even caudate-acuminate.

As Miers pointed out in Ill. S. Am. Pl. 2. App. 57. 1857, the type of *Saracha* R. & P. is *Poecilochroma punctata* (R. & P.) Miers. Consequently the "proper" generic name for the latter is *Saracha* and the synonymous *Bellinia* R. & S. Syst. 4: 687. 1819 must be revived for *Saracha*, as that genus has been accepted. But sooner or later conservation by agreement will support common sense, as it has done so frequently in similar cases, and legalize the continued use of the name *Saracha* in the long-accepted sense. So in the meantime I shall disobey the International Rules in fact while complying with them in spirit. It is interesting that, though Miers took up *Witheringia* for *Saracha* (thinking it to be synonymous), he later retracted his own action, op. cit. 148–149.

**Hebecladus propinquus** (Miers) Bitter, var. **parviflorus** Bitter, Rep. Spec. Nov. 17: 250. 1920. *H. Weberbaueri* Bitter, op. cit. 20: 372. 1924.

Except for a somewhat denser habit and pubescence, *H. Weberbaueri* seems to resemble the variety of *H. propinquus*. If it is actually a species, it requires a new name because of the existence of *H. Weberbaueri* Damm. Bot. Jahrb. 37: 638. 1906. But except for the puberulent stems, the latter seems to be the same as *H. intermedius* Miers, Hook. Lond. Journ. 4: 323. 1845.

**Lycianthes cutacensis** (HBK.), comb. nov. *Solanum cutacense* HBK. Nov. Gen. & Sp. 3: 38. 1818.

This is a *Lycianthes* and, at least among Peruvian species, resembles most *L. acutifolia* (R. & P.) Bitter, Abhandl. Nat. Ver. Brem. 24: 453. 1920, and its very close relatives, *L. tarmensis* Bitter, op. cit. 451 and *L. Weberbaueri* Bitter, op. cit. 446. It differs from all these in its smaller (4 cm. long or less) leaves, longer petioles, shorter calyx teeth, and unequal filaments. It is known only from the type, from the Department of Piura, Peru.

The two species described by Bitter are doubtfully distinct from the Ruiz and Pavón plant, but as we yet have only the original collection of the latter, its range of variation is, of course, entirely unknown. From the single specimens available, then, in each case, the Bitter plants appear to be distinguishable by their ovate- rather

than linear-lanceolate leaves. Also, *L. Weberbaueri* has larger, hairier flowers; in this respect it differs, too, from *L. tarmensis*, from which it is further distinguished by the less pubescent leaves, especially above.

**Lycianthes hypomalaca** Bitter, Abhandl. Nat. Ver. Brem. 24: 344. 1920.

This is obviously distinguishable from *L. glandulosa* (R. & P.) Bitter only by the somewhat more stellate-tomentose younger branchlets and more gradually acuminate leaves. The flowers may be a little larger. It seems probable that more collections will prove the existence of but one, perhaps somewhat variable, specific entity.

**Solanum Tafallae,** nom. nov. *S. multifidum* R. & P. Fl. Peruv. 2: 37. *pl. 171.* 1799, not Lam. Ill. 2: 17. 1797.

This plant from southern Peru may be named for the collector and artist, Juan Tafalla, since the name *multifidum* given it by Ruiz and Pavón was already borne by another, and valid, species.

**Solanum diffusum** R. & P. var. **miozygum** (Bitter), comb. nov. *S. diffusum* R. & P. subsp. *miozygum* Bitter, Bot. Jahrb. 54: Beibl. 119: 14. 1917.

It seems to me that varietal rank expresses more satisfactorily the relationship of this variant to the typical form of *S. diffusum*, since it does not differ essentially except in fewer (2–3) pairs of leaflets. It is from the same region in Peru as the type.

**Solanum maleolens,** nom. nov. *S. foetidum* R. & P. Fl. Peruv. 2: 39. 1799, not Rottb. Act. Lit. Univ. Hafn. 1: 287. 1778.

It is not at all clear, if one may judge from the original description, that this Peruvian species is closely related to *S. caavurana* Vell., as suggested by Dunal (though he had not seen the type) in DC. Prodr. 13[1]: 147. 1852. Material apparently referable to *S. foetidum* R. & P., collected by the Marshall Field Botanical Expedition to Peru at Tarma, the type locality, is entirely different from the Brazilian plant of Vellozo. It has ovate leaves, subumbellate inflorescences, and huge orange berries, as described.

**Solanum patulum** Pers. f. **album,** f. nov., e f. typica differt corollis albis.—Peru: Tambo de Vaca, Dept. of Huánuco, *Macbride 4441* (Type, Field Museum).

The typical form of this beautiful showy-flowered shrub or small tree of the lower and eastern Peruvian Andes has violet or wistaria-

colored blossoms. There is a good description of it by Bitter, Bot. Jahrb. 54: Beibl. 119: 8. 1916. I collected it at Tambo de Vaca (*4351*), where the white-flowered form was occasional. A native name is "urahuacta." Apparently these collections are the first since the original ones by Ruiz and Pavón near Muña.

**Solanum amblophyllum** Hook. Bot. Misc. 2: 231. 1831. *S. hypostichopogon* Bitter, Rep. Spec. Nov. 16: 95. 1920.

With a number of collections before me, including *Pennell 14418* from Obrajillo, Peru (the type locality of Hooker's plant), my own *568* from Viso, and others in the herbarium at Berlin-Dahlem, Bitter's suggestion that his proposed species might prove to be only a small-flowered subspecies of Hooker's seems to have been extraordinarily well taken, for I am unable to detect even a varietal difference. If there is ever a slight modification in the size of the flowers (the character stressed by Bitter), it seems reasonable to conclude that it is an individual variation perhaps due to altitudinal conditions, drouth or what not.

**Cyphomandra crassifolia** (Ortega), comb. nov. *Solanum crassifolium* Ortega, Dec. 9. 117. 1797. *S. betacea* Cav. Ic. 6: 15. *pl. 524*. 1801. *C. betacea* Sendt. Flora 28: 172. *pl. 6*. 1845.

Apparently the well-known "tree tomato" has never been christened properly, that is, according to the rules of botanical nomenclature.

**Brunfelsia bonodora** (Vell.), comb. nov. *Besleria bonodora* Vell. Fl. Flum. 261. 1825; Ic. 5: *pl. 80*. 1827. *Franciscea latifolia* Pohl, Pl. Bras. Ic. 1: 3. *pl. 1*. 1827. *Brunfelsia latifolia* Benth. in DC. Prodr. 10: 199. 1846.

Somewhere Bentham, perhaps in the introduction to his revision of *Cassia*, remarks that with good reason all of Vellozo's names could be ignored. This feeling will always arouse much sympathy, but nevertheless, as when Bentham wrote, many Vellozo names are accepted. Indeed, when there exists no doubt as to their application, and they have clear priority, acceptance must be a matter of course. The many that are dubious will remain, it is hoped, in the questioned synonymy to which Bentham and others have rightly relegated them. But there are others, as this *Brunfelsia*, which appear to be definitely designated—in this case the application of the name has never been doubted, I think—and so, in accord with custom, the Vellozo name should be used rather than the later-published one of Pohl.

## 4. OTHER PERUVIAN PLANTS, CHIEFLY NEW SPECIES

**Carex hypsipedos** Clarke, Bot. Jahrb. 37: 518. 1905. *C. umbellata* Schk. var. *depressa* Kükenth. Pflanzenr. 38: 453. 1909.

I am indebted to Mr. R. Gross, the diligent student of the Cyperaceae at Berlin-Dahlem, for calling my attention to the fact that the above names for this interesting species are based on the same collection, namely *Weberbauer 2617* from La Oroya, Peru. Professor Kükenthal, l. c., does not seem to have accounted for Clarke's name. I think the plant is a good species. Its leaves are very much shorter (about 3 cm. long) than in any form of *C. umbellata*, the achene is scarcely beaked and, particularly, the scales are distinctly three- rather than one-nerved. These characters, together with the difference in appearance and the quite remote habitat, serve surely to distinguish *C. hypsipedos* specifically from *C. umbellata* and its varieties. Its aspect, in general, is nearly that of *C. brachycalama* Griseb., a species vastly different from a critical standpoint. It is evidently an outlying specific unit of an otherwise entirely north-temperate group.

**Carex fecunda** Steud. Syn. Cyp. 194. 1855.

An extreme state of this species has been collected in the Department of Cuzco, Peru, by Herrera (*1099*) which represents *C. atropurpurea* Boeckl. Linnaea 39: 150. 1875. It so emphasizes the characters of the Boeckeler plant—red-purple rather than brownish scales and perigynium and subovate, sessile or subsessile and crowded, rather than oblongish and remote, spikes—that it is not altogether satisfactory to regard it as identical with *C. fecunda*. On the other hand, *Weberbauer 3996* from Cajamarca appears to be an intermediate, as it has the dark color of Boeckeler's form but nearly the inflorescence of Steudel's. The former, apparently, should be recognized as a form or variety of the latter.

**Dichromena exaltata** (Kunth), comb. nov. *Rynchospora exaltata* Kunth, Enum. Pl. 2: 291. 1837.

I find that this Brazilian species, omitted from my recent list of Dichromenas known to grow in Peru (Field Mus. Bot. 4: 165–167. 1929) is represented from the montaña of that country (Hacienda Schunke, La Merced) by my number *5750*. The material seems to match well this species as it has been interpreted by Clarke in the Berlin-Dahlem herbarium.

**Dichromena locuples** (Clarke), comb. nov. *Rynchospora locuples* Clarke, Bot. Jahrb. 34: Beibl. 78: 5. 1904.

This Ecuadorian species is apparently represented from Peru for the first time by my number *4109* from Muña, Department of Huánuco. The determination has been kindly confirmed by Mr. R. Gross at Berlin-Dahlem.

**Dimerocostus bicolor,** sp. nov., *D. unifloro* similis; caulibus erectis glabris 2 m. altis; foliis superioribus breve petiolatis oblongo-lanceolatis sensim acute acuminatis supra glabris viridibus subtus dense adpresseque argenteo-pubescentibus circa 2 dm. longis et 4 cm. latis; floribus ignotis; capsula vix coriacea; semina irregulariter quadrata nitido-nigra circa 4 mm. lata.—Peru: Shady ravine, Hacienda Villcabamba, Río Chinchao, July 17–23, 1923, *Macbride 5001* (Type, Field Museum).

Except as noted, this plant appears to match the type of *D. uniflorus* (Poeppig) Sch. (*Costus uniflorus* Poeppig ex Peters. Fl. Bras. 3: 58. 1890), which came from Yurimaguas, Peru, and evidently is the same as *Eggers 14992* from Ecuador, as determined by Professor Loesener. The leaves of the latter are sessile, oblong-elliptical, caudate-acuminate, and green on both sides although obscurely hirsutulous beneath, the caudate tips densely so with somewhat spreading hairs. The narrower, shortly petioled leaves of *D. bicolor* are silvery beneath with a very close indument which even at the leaf tips is scarcely hirsutulous. The subquadrate, very lustrous black seeds are in contrast to the "canescent-black ellipsoid" ones of *D. uniflorus.* Therefore, with no intermediate specimens before me, it seems necessary to regard my collection as representing a distinct species.

**Pourouma folleata,** sp. nov., arborea(?); ramulis junioribus leviter angulatis, glabratis; petiolis adpresse setulosis mox glabratis gracilibus, 2–3 cm. longis; foliis integris vel leviter repando-undulatis, ellipticis, basi acutis, apice subabrupte brevissimeque acuminatis, majoribus circa 12 cm. longis et 6 cm. latis, chartaceis, supra viridibus laevibus glabris vel in costa plus minusve strigillosis, subtus albidis inter costulas plerumque 15 breviter tomentellis, costa costulisque dense adpresseque strigillosis; stipulis subflavo-villoso-sericeis 2.5 cm. longis; pedunculis inflorescentiarum 1.5 cm. longis; inflorescentia masculina composito-cymosa, griseo-ochraceo-hirtella; floribus tenuiter pedicellatis subfasciculatis haud capitulato-confertis; perigynio ut videtur ad basin partito paullo hirtello, segmentis lineari-subulatis acuminatis; antheris subglobis.—Peru: Chanchamayo Valley, Dept. of Junín, *Carlos Schunke 416* (Type, Field Museum).

The comparatively loose inflorescence and the smooth upper leaf surfaces of this species are two characters which, combined, seem not to have been described for any other *Pourouma*. The leaves are falsely plicate or, with a little imagination, "baggy," to which feature the name may refer, if not as well to the open flower clusters.

**Suaeda insularis** (Britton), comb. nov. *Dondia insularis* Britton, Bull. N. Y. Bot. Gard. 4: 138. 1906.

This species is represented in duplicate in the collection made by Dr. and Mrs. Millspaugh in the Bahamas in 1911 and, according to the International Rules of Botanical Nomenclature should be called a *Suaeda*.

**Cleome gigantea** L. Mant. 430. 1771.

*C. Kerberi* Briq. Ann. Conserv. & Jard. Bot. Genève (*C. monochroma* Macbr. Field Mus. Bot. 4: 169. 1929) is merely a variant of this ancient species. I did not associate the specimens I described with the plant of Linnaeus because the latter has been characterized as a shrub and as much more pubescent. However, the species apparently flowers as a biennial and varies in degree of pubescence and size of flowers.

**Ribes hirticaule,** sp. nov., fruticosum, 2 m. altum; caulibus foliosissimis dense cum pilis longissimis fulvis firmiusculis non vel vix glandulosis etiam pilis albis minutis crispis intermixtis pubescentibus; stipulis conspicuis margine apiceque longe ciliatis circa 1 cm. longis; petiolis circa 4 cm. longis; foliis cordato-ovatis valde trilobatis irregulariter serratis plerumque circa 10 cm. longis et 12 cm. latis firmo-membranaceis supra glabratis vel parce cum pilis albis minutis et etiam fulvis firmis longioribus pubescentibus subtus pallidioribus leviter cinereo-pubescentibus praecipue ad nervos nervulosque et cum pilis aliquid fulvis longioribus intermixtis, lobis acutis vel subacuminatis vel interdum lateralibus obtusiusculis; racemis 1–1.5 dm. longis conspicue bracteatis, bracteis oblongo-lanceolatis vel anguste obovatis (basi chartacea) superne parce denticulatis ad anthesin fere 1.5 cm. longis; pedicellis 3–5 mm. longis; bracteolis circa 3 mm. longis; floribus igneo-rubris plus minusve (cum pedicellis) cinereo-pubescentibus haud glandulosis 5–6 mm. longis tubuloso-campanulatis, sepalis apice acutis subcucullatis; petalis oblongis 1 mm. longis; staminibus (in floribus feminis) subaequalibus cum petalis insertis circa 1 mm. longis; ovario dense glandulo-hirsuto.—Peru: In evergreen shrub-wood, Putis, Choimacota Valley, Dept. of Ayacucho, February 27–March 12, 1906, *Weberbauer 7529* (Type, Field Museum).

Strikingly distinct from *R. albifolium* R. & P. and *R. macrobotrys* R. & P., its nearest apparent relatives, by the almost shaggy, reddish, hirsute stems. It also lacks the stipitate glands of those species, and the petals are larger.

**Ribes praecox,** sp. nov., fruticosum vel subarboreum; ramulis tortuoso-ramosis obscure pulverulentis demum glabris et nitidis; foliis paucis cum floribus productis, novellis breviter (circa 0.5 cm.) petiolatis plus minusve praecipue subtus dense cum glandulis flavis sessilibus glanduliferis subtus etiam minutissime puberulis supra ruguloso-reticulatis, denticulatis et ut videtur obscure vel interdum late trilobatis, ovato-rotundatis, circa 1 cm. longis; racemis cinereo-pulverulentis et minutissime cum glandulis sessilibus glandulosis densifloris 1–1.5 cm. longis; bracteis ovato-oblongis superne 1–3-denticulatis circa 2 mm. longis; pedicellis 1.5–2 mm. longis; bracteolis circa 1 mm. longis; floribus viridi-luteis breviter campanulatis 3–3.5 mm. longis, sepalis valde reflexis apice acute subcucullatis; petalis distincte obovatis paullo exsertis 1.5 mm. longis cum staminibus aequalibus insertis; staminibus (in floribus masculinis) 1.5 mm. longis; fructibus ignotis.—Peru: Shrubby tree of rock fences and cliffs, Llata, Dept. of Huánuco, August 21, 1922, *Macbride & Featherstone 2251* (Type, Field Museum).

Although the relationship of this shrub is not clear to me, it seems to be undescribed. In aspect it somewhat suggests *R. glandulosum* R. & P. and allies (cf. Janczewski, Monogr. Gros. 258. 1907), but the petals and stamens are inserted equally. Among species possessing this character there appears to be none so completely lacking in stipitate glands and at the same time with prominent petals. The sessile glands suggest that it belongs in the section *Euparilla* Jancz., l. c., but the glands are minute and not punctately sessile, and the foliage of the members of that group is different. If the plant is not dioecious it is comparable, in Janczewski's treatment, to *R. sucheziense* Jancz., from which it differs decidedly in flowers and foliage. The young ovaries in the flowers examined appear to be infertile.

**Ribes incertum,** sp. nov., fruticosum ad 1 m. altum, fere ubique glabrum; ramulis numerosis brevibus; foliis terminalibus congestis late oblongis ut videtur sessilibus ad basin vix vel haud angustatis apice breviter obtuse denticulatis firmis subtus obscure 3-nerviis; racemis valde reductis 1–3-floris; floribus viridi-luteis brevissime pedicellatis haud stipitato-glandulosis minutissime pulverulentis campanulato-rotatis 4 mm. longis, sepalis vix acutiusculis; petalis oblongis vel oblongo-spathulatis fere 1 mm. longis cum staminibus inaequalibus (semper?) insertis, staminibus non longioribus, antheris conspicuis.—Peru: In slide rock, Pomopampa, east of Huaraz,

Dept. of Ancash, October 4, 1922, *Macbride & Featherstone 2493* (Type, Field Museum).

This shrub is obviously very similar to *R. cuneifolium* R. & P., but it is perhaps distinct by virtue of its somewhat oblong leaves and yellowish flowers with unequally inserted stamens and petals. The Ruiz and Pavón species with cuneate-flabelliform leaves is typically represented by my number *2982* from Río Blanco. The name of the species proposed here refers to the precarious existence of the shrub in moving slide rock at an altitude of about 4,500 meters; if not to its dubious specific standing!

**Rubus sparsiflorus** [Focke], sp. nov., mediocriter robustus et molliter villosus, circa 1 m. altus; ramis subangulatis parce et breviter aculeatis, aculeis recurvis; foliis submembranaceis, ternatis vel interdum quinatis; petiolis plerumque 6–10 cm. longis gracilibus plus minusve dense aculeatis; stipulis lineari-lanceolatis, fere 1 cm. longis, longe persistentibus; foliolis ovatis, basi rotundatis vel subtruncatis, apice subabrupte acuminatis aequaliter serrulatis, plerumque 6 cm. longis et 3.5 cm. latis vel majoribus 8 cm. longis et 5.5 cm. latis, supra viridibus demum glabratis et paullo nitidulis, subtus pallidioribus et praecipue ad nervos nervulosque plus minusve subadpresse villosis, utrinque 10–12-nerviis; nervis solum mediocriter prominentibus vel supra vix notatis; racemis 2–4 cm. longis, axillaribus terminalibusque, 3–6-floris; floribus intense roseis, 1.5–2 cm. latis; pedicellis vix 5 mm. longis dense fulvo-villosis haud glandulosis; sepalis ovato-lanceolato-acuminatis, utrinque pilosis demum patentibus; carpellis satis numerosis (10–circa 15) circa 5 mm. longis, glabris vel ad apicem parce pilosis.—Peru: Grass-shrub slopes, Mito, Dept. of Huánuco, July 8–22, 1922, *Macbride & Featherstone 1674*, two sheets (Type, Field Museum). Above San Miguel, Dept. of Cajamarca, May 7, 1904, *Weberbauer 3940*.

Because of its axillary few-flowered racemes, this plant is a member of the section *Dissitiflori* Focke, according to that author's treatment of the subgenus *Eubatus*, Bibliotheca Botanica 83. 3: 49. 1914. It differs at once from the known species of this group in its villous pubescence. Possibly it can be treated as a variety of *R. floribundus* of the section *Floribundi*, characterized by terminal inflorescences, a disposition suggested by Professor Focke on the herbarium sheet of the Weberbauer specimen. But the few-flowered lateral racemes are scarcely the result of interrupted growth, as he thought possible, since my collections, in both flower and fruit, confirm the constancy of this character. The plant seems, therefore, actually to be a third species of the section *Dissitiflori*.

In naming my Peruvian collections of *Rubus* I found that one must either propose several new species or interpret more broadly

the concepts of those already described. Inasmuch as *Rubus* in Peru evidently maintains its well-known reputation in the production of many perplexing combinations of characters, it may be preferable to follow the latter alternative, with the result that the following changes in nomenclatorial rank seem necessary.

**Rubus roseus** Poir. var. **Lechleri** (Focke), comb. nov. *R. Lechleri* Focke, Abh. Nat. Ver. Bremen 4: 161. 1874.

The characters of this plant—its more or less paniculate and shortly peduncled flowers—are not constant. A recent collection is *Pennell 13831* (as in Field Museum) from the Dept. of Cuzco, Peru. Another variant, characterized particularly by smaller flowers borne as in variety *Lechleri* and by somewhat more dentate stipules is

**Rubus roseus** Poir. var. **santarosensis** (Ktze.), comb. nov. *R. santarosensis* Ktze. Rev. Gen. $3^2$: 80. 1898.

**Rubus Weberbaueri** Focke, Bibliotheca Bot. 72. 1: 38. 1910.

This beautiful species is represented now from Tambo de Vaca, Dept. of Huánuco, *Macbride 4393*. *R. nubigenus* HBK. subsp. *Ruizii* Focke, Abh. Nat. Ver. 4: 162. 1874, collected by Ruiz at Pillao, appears to me to be typical *R. Weberbaueri*.

**Rubus floribundus** HBK. Nov. Gen. & Sp. 6: 219. 1823.

It does not seem to me that *R. boliviensis* Focke, Abh. Nat. Ver. Bremen 4: 158. 1874 is more than a sometimes sturdier, hairier race or possibly variety of this plant. The size of the flowers varies. It is the most common species in the Andes of Peru and naturally may be expected to be variable in characters of foliage and pubescence. Probably several other "species" should be included in this one. Perhaps it hybridizes with *R. bogotensis* HBK. and *R. urticaefolius* Poir., with which species I have found it growing. I have the following intermediate collections for which no name seems to be available; and as they apparently have mostly the character of *R. floribundus*, except for the presence of a few glandular or non-glandular setae on the upper branches (which suggests a relationship to the two species just mentioned), they may be treated as

**Rubus floribundus** HBK. var. **nimbatus**, var. nov., plus minusve molliter villosus; ramulis superne plus minusve cum pilis setosis interdum glandulosis etiam strigillosis pubescentibus.—Peru: Huacachi, near Muña, Dept. of Huánuco, May 20–June 1, 1923, *Macbride 3894* (Type, Field Museum). Yanahuanca, Dept. of

Huánuco, *Macbride & Featherstone 1218*. Villcabamba, Hacienda on Río Chinchao, Dept. of Huánuco, *Macbride 5200*.

**Kallstroemia caribaea** Rydb. N. Amer. Fl. 25: 111. 1910.

This variant of the typical form of *K. maxima* (L.) Wight & Arnott, is distinguishable constantly only by its strigose fruit. Known heretofore only from as far south as Colombia, it has been collected recently in the Department of Piura, Peru, by Oscar Haught (*F–161* and *F–51*). Like the glabrous-fruited type, it exhibits some variation in length of pedicels and breadth of sepals, but these seem clearly to be individual differences as they are not correlated with each other or with characters of flowers or fruit. I think, therefore, that *K. caribaea* merits only varietal recognition since it possesses but a single character and that one of pubescence. Study of the two forms where they grow in the same region will probably determine their relationship definitely.

**Fagara tumbezana**, sp. nov., arborea 8 m. alta; ramis glabris ut videtur paullo vel haud armatis; ramulis novellis foliisque utrinque breviter et molliter plus minusve pilosis; foliis densis valde inaequalibus, petiolo teretiusculo supra complanato subtus aculeis flavescentibus interdum sparse obsito suffultis; foliolis breviter petiolatis 3–4-jugis oblongo-ellipticis vel interdum subovato-ellipticis breviter acuminato-acutiusculis basi obtusis obliquis margine haud vel minutissime crenulatis, 3–5 cm. longis et 1.5–2 cm. latis sed plerumque circa 8 cm. longis 3 cm. latis, chartaceo-coriaceis, nervo medio lateralibusque cum venis reticulatis utrinque paullo prominentibus; paniculis subracemosis axillaribus minute pilosis circa 4 cm. longis; pedicellis gracilibus 3 mm. longis; calycis laciniis ovatis circa 0.5 mm. longis; petalis 5 anguste ovato-oblongis 2 mm. longis glabris; filamentis quam petala vix brevioribus; antherae cordatae conspicuae; ovarii rudimento trigono in stylum brevem attenuato.—Peru: Mountains east of Hacienda Chicama, Dept. of Tumbez, *Weberbauer 7642* (Type, Field Museum).

There are comparatively few softly pubescent Fagaras, and this species does not seem to be particularly allied to any of them. Rather, it is perhaps related to the glabrous or lightly pubescent *F. Riedeliana* Engler, which has been found in Ecuador and, apparently, also in Peru. *F. tumbezana* comes from a part of Peru which is especially rich in endemic species, many of them discovered by Professor Weberbauer. They probably will be found to grow in some part of Ecuador, the flora of which is practically unknown.

**Esenbeckia Warscewiczii** Engler in Mart. Fl. Bras. $12^2$: 148. 1874.

This little-known species, collected more than half a century ago in northern Peru, has been found recently by Professor Weberbauer in the mountains east of the Hacienda Chicama, Dept. of Tumbez (*7645*). It is a shrub about 4 m. high with dark violet flowers. His *7110* from Cajamarca is probably the same.

**Heteropteris nervosa** Juss. var. **Lessertiana** (Juss.), comb. nov. *H. Lessertiana* Juss. Arch. Mus. 3: 462. 1843. *H. suberosa* (Willd.) Griseb. var. *Lessertiana* Juss. ex Griseb. in Mart. Fl. Bras. 12: 69. 1858.

The specific name *nervosa* Juss. was published in St. Hilaire's *Flora Brasiliensis* in 1832 and therefore must supplant the better-known but later published *suberosa*, which was only an herbarium name until taken up in 1839 by Grisebach in Linnaea 13: 229. There is a still earlier name, *Banisteria eglandulosa* DC. Prod. 1: 590. 1824, but not *H. eglandulosa* Juss., which is another and possibly, if not probably, a valid species proposed previously to that of DeCandolle.

The application of the generic names *Heteropteris* HBK. and *Banisteria* L. has been discussed by Fawcett and Rendle in their *Flora of Jamaica* 4: 232. 1920, and by Niedenzu in his detailed monograph, Pflanzenr. IV. 141: 386. 1928. It is evident that the continued acceptance of these groups in the sense of HBK., Jussieu, and all authors to 1910, is arbitrary and invalid technically under accredited rules of nomenclature, but it is equally obvious that any reassignment of the names (as proposed, for instance, by C. B. Robinson and followed by Small, N. Amer. Fl. 25, pt. 2) would result in much confusion and inconvenience not only for present students but for those of the future. This seems clearly to be a case where strict adherence to rules would void common sense. In disobeying the rules in this instance I may be accused of failing to practice what I preach,[1] but when absurdity is the price of obedience one may be expected to refrain from action which could be defined only as ridiculous.

**Heteropteris orinocensis** (HBK.) Juss. var. **eglandulosa** (Juss.), comb. nov. *H. eglandulosa* Juss. in St. Hil. Fl. Bras. 3: 27. 1832. *H. acutifolia* Juss. var. *eglandulosa* Ndz. Arb. Bot. Inst. Lyc. 50. 1903.

**Banisteria sanguinea** Juss. var. **Benthamiana** (Juss.), comb. nov. *B. Benthamiana* Juss. Malp. Syn. 281. 1840.

[1] Cf. Journ. Wash. Acad. Sci. 19: Nos. 12 and 14. 1929.

This variety differs from the typical form of the species in the glandular calyx and smaller leaf glands, 4–6 in number. These are differences common to many Banisterias, yet Niedenzu recognizes *B. Benthamiana* as a distinct species. Several which he treats as varieties of earlier described forms, for instance the variety *grata* (Griseb.) Ndz. of *B. laevifolia* Juss., might have been maintained as distinct, it would seem, with more reason.

**Tetrapteris crispa** (Rich.) Juss. var. **punicans,** var. nov., foliis late elliptico-ovatis, 1.5–2 dm. longis, 1.2–1.5 dm. latis; petiolis plerumque circa 2 cm. longis; petalis 5–6 mm. longis.—Peru: Muña, Dept. of Huánuco, *Macbride 3904* (Type, Field Museum).

This variant has the small flowers of the related species, *T. magnifolia* Griseb., but the mature samaras are dorsally winged as typical for *T. crispa*. The yellow flowers as well as the fruits are tinged with red. The variety *subcordata* Ndz. resembles our plant only in its broad-based leaves.

**Tetrapteris Triopteris,** nom. nov. *T. crispa* (Rich.) Juss. subsp. *pseudotriopterys* Ndz. Arb. Bot. Inst. Lyc. 4: 16. 1912.

As Niedenzu points out, the fruit of this Peruvian plant, being essentially 3- instead of 4-winged, is nearly that of a species of *Triopteris*. In other respects, however, it shows an apparently close relationship to *Tetrapteris*, and its existence might be used reasonably enough as an argument for the union of the two genera. From a practical standpoint, however, the genera are distinct, in character of foliage, in range, and, except for this single aberrant species, in character of fruit.

With reluctance I have altered Dr. Niedenzu's name *pseudotriopterys* in order to gain a shorter species name and at the same time retain the author's evident purpose in letting the name suggest the salient character of this unusual *Tetrapteris*. I believe there is no provision in the International Rules requiring the use without modification of a name of lower rank than species when the status of the plant concerned is changed.

**Vochysia Leguiana,** sp. nov., arborea magnifica; ramulis foliis subtus ramulisque inflorescentiarum dense cum pilis ferrugineis hirsutulo-villosis; foliis sessilibus vel brevissime petiolatis, ut videtur fasciculatis, oblongo-obovatis vel elongato-ellipticis, apice rarius rotundatis, saepius abrupte acuminatis, basi sensim angustatis, majoribus circa 1.5 dm. longis, 7 cm. latis, supra haud nitidis primo minute et obscure strigillosis demum glaberrimis, subtus imprimis ad nervos dense rufo-piloso-hirsutis; nervis supra mediocriter impres-

sis, subtus valde prominentibus praecipue mediano et secondario; venis ramuloso-reticulatis; inflorescentia cylindrica densiflora, 1–1.5 dm. longa cicinnis pedunculatis solum 1-floris; alabastris oblongo-ellipticis apice rotundatis, circa 1.5 cm. longis; calycis leviter hirsutuli laciniis quatuor inaequilongis late ovatis acutis, calcare patentissimo vel deflexo cylindrico paullo incurvo calyce duplo longiore; ovario dense hirsuto.—Peru: Chanchamayo Valley, Dept. of Junín, *Carlos Schunke 434* (Type, Field Museum).

Apparently no other species of *Vochysia* has the dense villous-hirsute, not at all tomentose pubescence which so strikingly characterizes this Peruvian one. Certain Brazilian species are reddish-hairy but also tomentose. If one may judge from the small branch collected, the bark does not exfoliate. The showy flowers are yellow.

In associating with this handsome tree of the Peruvian montaña the name of the distinguished President of Peru, I record appreciatively his well-known interest in scientific and educational endeavor.

**Mauria denticulata,** sp. nov., fruticosa 3 m. alta; ramis glabris; foliis 3-jugis rarissime unifoliatis; foliis plus minusve praecipue ad apicem irregulariter mucronulato-denticulatis ovato-lanceolatis basi subacutis vel cuneato-obtusis interdum obliquis apice sensim in acumen longiusculum acutum angustatis circa 10 cm. longis et 3.5 cm. latis, 2–3 mm. longe petiolatis, subcoriaceis supra glabris vel costa media (leviter impressa) obscure pulverulenta, subtus in axillis nervorum cum pilis erectis firmiusculis fulvis dense pubescentibus caeterum glabris; nervis lateralibus subtus reticulato-ramulosis prominentibus paniculis subsessilibus leviter hirtellis multi- sed laxifloris ad 1.5 dm. longis; pedicellis circa 2 mm. longis; staminibus 10 inter lobos disci subannularis crenato-10-lobi insertis circa 1 mm. longis, antheris filamento libero subaequalibus.—Peru: Shrub in evergreen subxerophytic bush-wood, Choimacota Valley, Dept. of Ayacucho, February 28–March 10, 1926, *Weberbauer 7546* (Type, Field Museum).

One or two species of the small genus *Mauria* have obscurely or remotely serrulate leaflets, but they are essentially subentire, so inconspicuous are their indentations. The leaflets of this shrub are sharply denticulate. This character seems to mark it as a distinct species, especially in conjunction with the dense tufts of coarse reddish hairs in the axils of the principal leaf nerves beneath. The axillary hair tufts, however, are known to occur sometimes in two or three other species but, in comparison, they are very meager in development. Of course, the range of variation in this and other respects of the species described recently from Peru is quite unknown.

**Ilex caniensis,** sp. nov., fruticosa, 1.5–2 m. alta; ramis longitudinaliter striatis, sordide griseis; ramulis annotinis subangulatis cum

petiolis (junioribus) pedicellisque plus minusve dense hirtellis; foliis glabris densis ellipticis elliptico-oblongis vel interdum late obovatis basi rotundatis vel paullo angustatis apice rotundato-obtusis vel mucronulato-acutiusculis, 3–4.5 cm. longis (plerumque 3.5 ) et circa 2–2.5 cm. latis, breviter (2–3 mm.) petiolatis, ad basin vix revolutis integris ad apicem acutiuscule serrulatis crasso-rigido-coriaceis supra nitidis subtus opacis paullo pallidioribus epunctatis, nervis lateralibus (5–6) supra vix prominulis leviter impressis subtus laxe ramuloso-reticulatis cum costa mediocriter prominentibus; pedunculis 1–3-floris ad 2 mm. longis; pedicellis 1–2 mm. longis; floribus 5–6-meris albis majusculis; calycibus 3 mm. latis, lobis fere rotundatis obscure parceque ciliatis; corolla subrotata, petalis ellipticis 3–3.5 mm. longis, 2.5 mm. latis; staminibus subexsertis, antheris filamentis longioribus.—Peru: Grassy slopes, Cani, Dept. of Huánuco, April 16–26, 1923, *Macbride 3455* (Type, Field Museum).

Most nearly related, according to Loesener's detailed and careful monograph of the family, to *I. uniflora* Benth., from which glabrous shrub it is readily distinguishable by the pubescence and by the longer (in proportion to breadth) leaves. Among the species with punctate leaves it most resembles *I. scopulorum* HBK., which is merely puberulent and has obscurely veined foliage. Other species to which it conceivably might be compared, for instance *I. Kunthiana* Triana, differ more widely in size or shape of leaves, petiole length, or in other respects. The comparatively few species described since the appearance (1908) of the second part of Loesener's work are mostly represented in the collection at Berlin-Dahlem.

**Hippocratea opacifolia,** sp. nov., arborea glaberrima; ramulis teretibus dense lenticellosis; foliis oppositis, breviter (2–3 mm.) petiolatis, oblongo-ellipticis basi gradatim attenuatis apice subabrupte et obtuse caudato-acuminatis, plerumque 13–16 cm. longis et 5– fere 6 cm. latis, chartaceis vix vel paullo nitidulis ut videtur griseo-viridibus et opacis obscure et remote undulato-denticulatis, costa media utrinque prominula, nervis lateralibus circa 6 supra vix notatis subtus prominentibus et venis plus minusve ramoso-reticulatis; inflorescentiis 3–5 cm. longis in foliorum axillis vel extra-axillaribus repetito-dichotomo-furcatis gracilibus et laxiusculis; pedunculo communi ad 3 mm. longo; bracteis ovatis acutis leviter denticulatis; calycis laciniis 5 fere rotundatis haud acutis vix 1.5 mm. longis; petalis suborbiculatis breviter unguiculatis 2.5 mm. longis, glabris minutissime erosis; staminibus 3 intra discum pulvinari-annularem 2 mm. diam. insertis, filamentis circa 0.5 mm. longis, antheris filamento latioribus subreniformibus; ovario disco et staminibus incluso sed libero, obscure 3-lobo haud in stylum angustato, 3-loculari, ovulis in loculo circa 3.—Peru: Chanchamayo Valley, Dept. of Junín, *Schunke 305* (Type, Field Museum).

I have found no other *Hippocratea* described as having subsessile leaves and few with leaves as large. Of course, when the fruit is known it may prove to be a *Salacia*, but in that genus, also, such large, shortly petioled leaves appear to be distinctive.

**Cormonema spinosum** (Vell.) Reiss. var. **peruvianum**, var. nov., a f. typica differt glandulis cupuliformibus, conspicuis; ramis inermibus vel spinis plerumque circa 2 cm. longis; foliis subcoriaceis. —Peru: Open river-cliff shrub-tree, La Merced, Dept. of Junín, August 10–24, 1923, *Macbride 5368* (Type, Field Museum); also *5264*.

If it were not for the existence in Argentina of another variant of this Brazilian shrub, which has not been classified but which has the glands of the Peruvian plant rather than the shallow patuliform ones of the type, I should describe this as a distinct species. Dr. Johnston referred it, in the absence of Brazilian material for comparison, to *C. spinosum* but noted on the sheet that the genus had not been recorded before from the northern Amazonian region. My specimens are only in fruit. For the time they may, therefore, be recognized, on the characters given, as representing a geographic variety. The Argentine shrub is yet another variant with more the leaf texture and short spines of the typical form.

**Cuphea carthagenensis** (Jacq.), comb. nov. *Lythrum carthagenense* Jacq. Stirp. Am. Hist. 148. 1763. *C. balsamona* Cham. & Schlecht. Linnaea 2: 363. 1827; 5: 569. 1830.

As there is no reasonable doubt that the plant of Jacquin and that of Chamisso and Schlechtendahl are the same, Jacquin's name, being the earlier, is to be taken up. The description of the calyx as "pilose" applies to no other closely related species as well as to this one. Furthermore, *C. balsamona* has been observed as the common weedy *Cuphea* about Cartagena, Colombia, the original locality of Jacquin's plant.

**Cuphea ciliata** R. & P. Prodr. 66. 1794; Syst. 120. 1798. *C. microphylla* HBK. Nov. Gen. 6: 201. 1823. *C. loxensis* HBK. op. cit. 200.

Attention may be called to the fact that the above name of Ruiz and Pavón stands notwithstanding the existence of the earlier published *Lythrum ciliatum* Swartz, which has been transferred to *Cuphea* by Koehne, Bot. Jahrb. 1: 454. 1881, and which is a synonym of *C. decandra* Ait. Hort. Kew. ed. 2. 3: 3, 151. 1811. The valid earlier use of the name "*ciliata*" in the genus *Cuphea* precludes,

according to International Rules, the taking up of Swartz' name as Koehne has done.

**Laguncularia racemosa** Gaertn. f. **longifolia**, f. nov., foliis oblongo-ellipticis, plerumque 10–11 cm. longis, 4 cm. latis.—Peru: Coastal plain between Tumbez and Zarumilla, Dept. of Tumbez, January 30–31, 1927, *Weberbauer 7527* (Type, Field Museum).

In the large series of specimens of this well-known seaside shrub in the herbarium at Berlin-Dahlem none appear to have leaves varying from the usual elliptic-oval form. Typically the leaves are also uniformly shorter than those of Weberbauer's material. Curiously, a specimen from rather near-by Guayaquil is quite typical.

**Niphogeton** Schlecht. Linnaea 28: 481. 1856. *Apium* L. sect. *Oreosciadium* DC. Prodr. 4: 101. 1830. *Oreosciadium* (DC.) Wedd. Chloris And. 2: 203. 1857.

Although Wolff, Pflanzenr. IV. 228: 46. 1927, follows DeCandolle in regarding this group as only a section of *Apium*, I think it is more properly treated, as by Bentham and Hooker and by Weddell, as a distinct genus. In general it is quite different, both in habit and habitat, and it always has involucral bracts. It is true that one section of *Apium* as defined by Wolff (sect. *Helosciadium*) is provided with bracts, but the species constituting it are aquatic or lowland weeds with the aspect of *Apium*, an aspect so totally different from that of the high andean plants considered here that to associate the latter in the same genus is not only inconvenient but seems unreasonable. Besides, the section *Helosciadium* of *Apium* may be as closely related, from a genetic standpoint, to *Sium* (with which it has often been allied) as to *Apium* and might conveniently be kept distinct from both. At any rate, the species comprising *Niphogeton* constitute a group too aberrant for inclusion in *Apium*, regardless of the disposition made of *Helosciadium*.

The following are the Peruvian species:

**Niphogeton dissecta** (Benth.), comb. nov. *Petroselinum dissectum* Benth. Pl. Hartw. 188. 1845. *Oreosciadium dissectum* Wedd. Chloris And. 2: 204. 1857.

**Niphogeton dissecta** (Benth.) Macbr. var. **aspera** (Wedd.), comb. nov. *Oreosciadium dissectum* (Benth.) Wedd. var. *asperum* Wedd. Chloris And. 2: 204. 1857.

All the Peruvian material of this species appears to be referable to this variety, distinguishable from the typical form by the somewhat scabrous foliage. The type of *Oreosciadium scabrum* Wolff,

Bot. Jahrb. 40: 305. 1908 (*Apium scabrum* Wolff, Pflanzenr. IV. 228: 49. 1927), has not been studied but collections made by me from the same region—along the railroad to La Oroya—exhibit in varying degree the characters relied upon by Dr. Wolff to distinguish his species. One may reasonably conclude, therefore, that these apparent differences are the result of local conditions of environment. The correctness of this conclusion is borne out further by the fact that a specimen from Dr. Herrera, collected in the southern Andes, the type region of the variety *aspera*, closely approaches *O. scabrum* in character.

**Niphogeton Weberbaueri** (Wolff), comb. nov. *Apium Weberbaueri* Wolff, Rep. Spec. Nov. 17: 175. 1921.

This interesting and distinct species, named for the distinguished phytogeographer of Peru, is apparently known only from the type collection.

**Niphogeton magna,** sp. nov., glabra; caulibus 4–6 dm. altis; foliis glaucescentibus radicalibus 2–3 dm. longis, segmentis bi- vel tripinnatisectis ultimis linearibus, apiculatis; petiolis circa 1.5 dm. longis, longe vaginantibus; caulinis similibus vel subpinnatisectis, plus minusve abrupte vaginantibus; umbellis 7–23-radiatis; radiis inaequalibus 2.5–5 cm. longis; foliolis involucri paucis, ut videtur sublinearibus, integris vel pauci-pinnatis, circa 1 cm. longis; involucelli foliolis integris circa 4 mm. longis quam pedicelli fructiferi paullo longioribus; fructibus nitidis, ovoideis, ad 4 mm. longis; jugis crassis, valde prominentibus.—Peru: At base of limestone cliff, La Oroya, May 27–June 7, 1922, *Macbride & Featherstone 968* (Type, Field Museum).

This is by far the largest species known. It apparently is most closely related to **Niphogeton glaucescens** (HBK.), comb. nov. (*Apium glaucescens* HBK. Nov. Gen. 5: 18. 1821), but that has much smaller leaves, shorter rays, and smaller fruits.

**Clavija euerganea,** sp. nov., fruticosa, 5 m. alta, glaberrima; foliis rigidiuscule coriaceis obovato-oblongis vel fere oblongis, 13–17 cm. longis, 4–5.5 cm. latis, apice rotundatis vel etiam acutiusculis, utrinque densissime et minute prominulo-reticulatis, margine peranguste flavido-marginata, grosse irregulariterque spinoso-serrata; petiolis crassis, 5–7 mm. longis; racemis ut videtur paucis, remotifloris, 7–15 cm. longis; pedicellis erectis vel nutantibus gracilibus per anthesin usque 4 mm. longis; bracteis ovato-acutis, minutissime ciliatis; floribus 5-meris, fere 15 mm. diam.; sepalis basi coalitis late orbicularibus, margine minute ciliata; petalis ultra ⅓ connatis lobis semiorbicularibus, minute crenulatis, fere 5 mm. longis; staminodiis emergentiisque annulum carnosum circa petalorum faucem forman-

tibus; tubus stamineus e petalorum fauce satis emergens tubo filamentorum quam antherae paullo longiore; ovarium floris masculini valde reductum.—Peru: In deciduous bushwood, mountains east of Hacienda Chicama, Dept. of Tumbez, February 19–24, *Weberbauer 7657* (Type, Field Museum).

If I interpret correctly, from description, the floral structure of *C. Lehmannii* Mez of Colombia, and of *C. Eggersiana* Mez of Ecuador, this species from Peru is most nearly related to those more northern plants, which are characterized by entire-margined leaves. The fleshy ring surrounding the corolla throat is irregular in form but apparently continuous by the union of the bodies alternating with the staminodia. The only other species with strongly spinescent leaves and with staminodia not entirely distinct are *C. pungens* (Willd.) Radlk., *C. Radlkoferi* Mez and *C. cauliflora* Regel. The first has densely spinescent leaves and the staminodia not fused, the second, acutish petals, and the third, short, densely flowered racemes.

According to Dr. Weberbauer the flowers of this beautiful species were brick-colored.

**Geissanthus abditus,** sp. nov., fruticosus, glabriusculus; ramulis crassiusculis apicem versus paullo angulatis; foliis obovato-ellipticis, basi aliquid attenuatis et in petiolum brevem (5 mm.) decurrentibus, apice obtusis vel rotundatis, margine integerrimis vel obscure undulatis, plerumque 12 cm. longis et 5–6 cm. latis, rigidiuscule chartaceis, glabris, supra opacis nervis vix notatis, subtus pallidioribus bene reticulatis, punctulis manifestioribus fere destitutis; paniculis pyramidatis, 1 dm. longis, 6 cm. latis; floribus brevissime pedicellatis; floribus 2.5 mm. longis subglabris 5-meris; calyce glabro, lobis ovatis perobscure punctatis; petalis lingulatis obscure vel haud punctulatis; stamina petalis permulto breviore e fauce vix emergentia antheris oblongo-ovatis acutiusculis; ovarium glabrum stylo e gracilioribus cylindrico, stigmate discoideo.—Peru: Open tree-shrub, Muña, Dept. of Huánuco, May 23–June 4, 1923, *Macbride 3978* (Type, Field Museum).

Closely simulating in foliage *G. Haenkeanus* Mez and *G. obtusus* Mez, both of which have been collected at or near Muña, this species might readily pass for either except for its extremely short stamens, which character allies it with *G. peruvianus* (A. DC.) Mez, according to Mez's treatment, Pflanzenr. IV. 236: 233–234. 1902. From the last it is readily distinguishable by its nearly complete lack of pubescence and by its entire obtuse leaves.

**Rapanea dependens** (R. & P.) Mez var. **saxatilis,** var. nov., petalis obtusis vel rotundatis, punctulis nullis vel perpaucis.—Peru: Very bushy 1 m. shrub of wet rocky montaña, Playapampa, Dept. of Huánuco, June 16–24, 1923, *Macbride 4865* (Type, Field Museum).

There seems to be only one noteworthy difference between this plant and the typical form of the species, but this—the lack of the black glands on the petals—is so striking that it merits taxonomic recognition. The habitat was unusual, the species commonly growing on well-drained slopes.

**Symplocos scabra,** sp. nov., arbor usque ad 7 m. alta ubique breviter ramosa; ramis junioribus dense adpresseque ferrugineo-strigoso-hispidis, demum glabratis sed scabro-punctulatis; foliis oblongo- vel ovato-ellipticis, basi cuneatis vel interdum subrotundatis, apice plus minusve angustatis obtusis, plerumque 8 cm. longis et 3.5–4 cm. latis, chartaceo-coriaceis, supra viridibus ut videtur glabris non vel vix nitidulis sed sub lente brevissime parceque scabriusculis, subtus pallidioribus sparse cum pilis subpatulis firmiusculis, brevibus et longis intermixtis, praecipue ad nervos scabro-pubescentibus, ad basin fere pseudo-glanduloso-serrulatis; nervis nervulisque supra vix notatis paullo impressis, subtus reticulato-ramosis valde prominentibus; petiolis 5–8 mm. longis; floribus ignotis; racemis axillaribus et etiam extra-axillaribus, 1–3-floris, circa 2 cm. longis; pedicellis 2–5 mm. longis; fructu ellipsoideo glabro 11 mm. longo circa 6 mm. crasso.—Peru: Wet, rocky, more or less wooded uplands, Tambo de Vaca, June 10–24, 1923, *Macbride 4898* (Type, Field Museum).

With very few exceptions, every one of the three hundred or so species of *Symplocos* recognized are represented at Berlin-Dahlem by at least a leaf. I therefore venture to describe this Peruvian tree as new, even in the absence of flowers, because in its large leaves and harsh pubescence it is not matched in that collection. Without flowers its position in Brand's monograph, Pflanzenr. IV. 242. 1901, is uncertain, although it is probably a member of the subsection *Pseudoaltonia* Brand. *S. Lehmannii* Brand has similar harsh pubescence but the leaves are three times smaller. Among Peruvian species *S. scabra* seems nearest *S. tristis* Brand and *S. coriacea* A. DC., both with soft pubescence and subentire leaves. *S. Mezii* Szylszyl. I have not seen, but that shrub is described as having indistinctly serrate-crenate and coriaceous leaves.

**Styrax ferax,** sp. nov., arbor; ramis gracilibus subteretibus junioribus sordide tomentosis, demum glabratis; foliis repando-undulatis, oblongo-ellipticis, basi subabrupte cuneato-attenuatis interdum plus minusve obliquis, apice subabrupte acutis vel breviter acuminatis, plerumque 7–9 cm. longis et 3–5 cm. latis, chartaceo-coriaceis, supra viridibus glabris nitidulis, subtus breviter et molliter cum pilis stellatis, griseis et flavis intermixtis, tomentoso-pubescentibus; nervis lateralibus 5–6, supra paullo notatis, subtus mediocriter prominentibus; petiolis usque 8 mm. longis; racemis 4–6 cm.

longis plus minusve paniculatis terminalibus vel etiam axillaribus patentibus flavescenti-stellato-tomentosis; pedicellis vix 1 cm. longis; bracteis minutis caducissimis, superne medio pedicelli; floribus 10–12 mm. longis, externe sericeo-stellatis; calyce minute denticulato cupuliformi 4 mm. alto; corolla 5-partita, tubo glabro 1.5 mm. longo, lobis ad basin dense pilosis.—Peru: Chanchamayo Valley, Dept. of Junín, *Schunke 431* (Type, Field Museum); also *289*.

According to Miss Perkins' disposition of the species of *Styrax*, Pflanzenr. IV. 241. 1907, this plant is intermediate between *S. polyanthus* Perk. (of Costa Rica) and *S. Poissonianus* Perk. Its leaves, especially in their fewer nerves, are different from those of either of these species, and it is further distinguished from the former by the yellowish-pubescent inflorescence and from the latter by the much smaller flowers. If one ignores the character of branched and open inflorescence, one is led by Miss Perkins' key to *S. tarapotensis* Perk., which is at once separable by the much larger leaves.

**Cordia lucayana** (Millsp.), comb. nov. *Varronia lucayana* Millsp. Field Mus. Bot. 2: 311. 1909.

In the course of writing labels for a duplicate set of Percy Wilson's collection of plants made in the Bahamas in 1907, my attention was called to this interesting endemic species of *Cordia*. In Contr. Gray Herb. 49: 16. 1917 I expressed the opinion that the segregation of this genus served no useful purpose, and I am still of this belief.

## 5. AN ILLINOIS VARIETY OF SHOOTING STAR

**Dodecatheon Meadia** L. var. **Frenchii** Vasey; Wats. & Coulter in Gray Man. ed. 6. 735b. 1891. *D. Meadia* L. subsp. *membranaceum* R. Knuth, Pflanzenr. IV. 237: 237. 1905.

*Specimens examined:* Fern Rocks, near Makanda, Ogle Co., Ill., May, 1871, *G. H. French.* Union County, Ill., May 10, 1873, *G. H. French.* Southern Ill., *Prof. Seymour* (no other data).

**Dodecatheon Meadia** L. f. **alba**, f. nov., petalis albis.—Illinois: Prairie swale, Rockford, Winnebago Co., June 19, 1927, flowers white, *Macbride 7073* (Type, Field Museum). Beach, Lake Co., May 26, 1918, flowers pure white, *Mrs. F. E. Pope.*

Although there are no other collections in Field Museum accompanied by the notation "flowers white," this color form is of not infrequent occurrence, as indicated by Gray's Manual ed. 7. 647, "corolla rose-color or sometimes white," and by Britton & Brown Ill. Fl. ed. 2. 2: 717, "corolla purple, pink or white." On the prairies of Lake County, Indiana, the white form seems to be more plentiful than that with rose corollas.

In studying a collection of the well-known shooting star made by myself in 1927 in northwestern Illinois, I noticed the publication of *Dodecatheon Meadia* L. subsp. *membranaceum* R. Knuth, based upon two collections from "southern Ill." One is from Macanda, Jackson County, but the other is from Fountaindale, Ogle County, a town nearly in the northwestern corner of the state! The Jackson County postoffice is sometimes spelled "Makanda," and it is the type locality of the variety *Frenchii* Vasey, a name not included in the monograph of Primulaceae by Pax and Knuth (Pflanzenr. IV. 237). This omission is not surprising in view of the obscure publication of the variety in an addenda and on a page (735b) apparently not inserted in every issue of edition six of Gray's Manual, for the leaf is lacking in one of the two copies in the library of Field Museum.

In its extreme development the variety *Frenchii* is very striking because of its exceptionally thin, broadly elliptic leaves. The blades of some of those on the type are 5 cm. wide by only 6 cm. long. Other plants, however, have ovate-lanceolate leaves mostly about 3 cm. wide by 7 or 8 cm. long. Although they may at first nearly equal the flowering scape, this may at least twice exceed them when in fruit. Individual plants may or may not show the slight pubescence mentioned in the original description. Accordingly, this plant seems best treated as only a variety of *D. Meadia*, as first published. Britton and Brown, Ill. Fl. 2: 717. 1913 reduce it outright while maintaining *D. brachycarpa* Small, Fl. S. E. U. S. 906. 1903, a form or race of the Southern States treated by Knuth as a subspecies but very doubtfully meriting more than varietal recognition because its character—a short capsule scarcely exceeding the calyx lobes—often can be nearly matched in northern material.